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Cover: *Geodorum laxiflorum* Griff.—inflorescence (Orchidaceae) © Ashish Ravindra Bhoyar.

INTRODUCTION

Wetlands are among the most fragile and productive habitats on earth (Mitsch & Gosselink 2000; Ladhar 2002; Kumar et al. 2005; Brraich & Singh 2021; Kaur & Brraich 2021). Harike Bird Sanctuary has wide flood plains along the confluence of the rivers Satluj and Beas in the Punjab districts of Ferozepur, Tarn Taran, and Kapurthala (Najar et al. 2017; Singh et al. 2020). India harbours over 1,400 bird species, of which over 300 rely on wetlands (Kumar et al. 2005; Praveen et al. 2016, 2020). Harike wetlands provide breeding, feeding, roosting and staging sites for many birds (Rahmani et al. 2016), and local bird diversity has been studied by various workers (Ali et al. 1981; Robson 1996; Kazmierczak et al. 1998; Robson 1999; Sawant & Sudhagar 2013; Prasad 2008a,b; Sangha 2013, 2017; Singh & Brraich 2021). The area is also home to the Smooth Indian Otter *Lutra perspicillata*, Golden Jackal *Canis aureus*, and Dolphin *Platanista gangetica minor* (Sinha 1997).

Birds are key components of wetland ecosystems. They are indicators of wetland health, as they respond to habitat changes such as human disturbance, poisoning, pollution, eutrophication, and siltation. They also reflect the productivity and trophic structures of wetlands (Morrison 1986; Subramanya 1996). Habitats play a significant role in bird diversity, and understanding habitat choices is important for bird conservation (Tavernia et al. 2016). In this study, a major aim was to prepare an inventory of avifaunal diversity in the various habitats of Harike wetland in different seasons.

Study Area

Harike Wetland is a large manmade freshwater riverine wetland and Wildlife and Bird Sanctuary in Punjab, India. Geographically, this sanctuary is located at latitudes of 31°06'N & 31°12'N and longitudes 74°55'E & 75°05'E semi-arid biogeographical zone formed by construction of Harike barrage in 1950 on river Beas and Satluj covering 8,435 ha area on the borders of districts Ferozepur, Tarn Taran, and Kapurthala and designated as Ramsar sites in 1990 (Image A) (Najar et al. 2017; Singh et al. 2020). Harike wetland was designated as wildlife sanctuary by the Ministry of Environment, Forest (MoEF), Government of India in 1982 later on it was declared as a bird sanctuary by the Punjab state government in 1992 (Mabwoga & Thukral 2014).

MATERIALS AND METHODS

Study site was visited in different seasons of Punjab for the span of two years (November 2019–November 2021) and birds are classified into three categories annual, winter, and summer birds (Mavi & Tiwana 1993). Survey was conducted during the maximum bird activity, predominantly between 0600–1100 h and 1500–1700 h adopting various methods like point count method, strip transect sampling, travelling with a manually propelled wooden fishing boat, visual counter method (Bibby et al. 2000; Buckland et al. 2001). Totally eight transect were designed to carry out the survey Image 2 and designated as I (6.23 km), II (6.95 km), III (2.25 km), IV (3.32 km), V (4.64 km), VI (5.47 km), VII (2.47 km), VIII (1.2 km) (Image 1 & 2). Observations of birds were made in all habitats which were classified as agriculture, built up (urban, rural, hamlet), forest (plantation, tree clad), water bodies (ponds, canal, brushwood along canal), wasteland (scrubland sandy area, shrubs/ grasses, dry bed of seasonal river), wetland (waterlogged aquatic vegetation, swampy land with scrub, reed, marshes) (Image 2) (Kalsi 1998; Kalsi et al. 2015; Singh et al. 2020). Photography of birds was done during the survey with DSLR camera Canon 1200D (75–300 mm zoom lens) and binocular (Olympus 8-16*40 zoom DPS-I) were used for spotting, and field notes were prepared, followed by identification of birds using field guides (Ali & Ripley 1983; Grewal et al. 1995; Grimmett et al. 2012) and nomenclature and classification is followed according to Praveen et al. (2016). The conservation status of species was assessed according to International Union for Conservation of Nature (2017), and residential and migratory status is based earlier literature and their presence or absence at study site (Grimmett & Inskipp 2010; Rai & Vanita 2021). Relative abundance is based upon the frequency of sightings birds were classified into different categories Very Common (recorded in more than 9–10/10 visits), Common (between 6–8/10 visits), Uncommon (between 3–5/10 visits) and Rare (recorded 1–2/10 visits) relative abundance on the basis of (McKinnon & Philips 1993). The relative diversity (RDi) of different families was calculated following La Torre-Cuadros et al. (2007) equation:

$$RDi = (\text{Number of Bird species in Family} / \text{Total Number of Bird Species}) \times 100$$

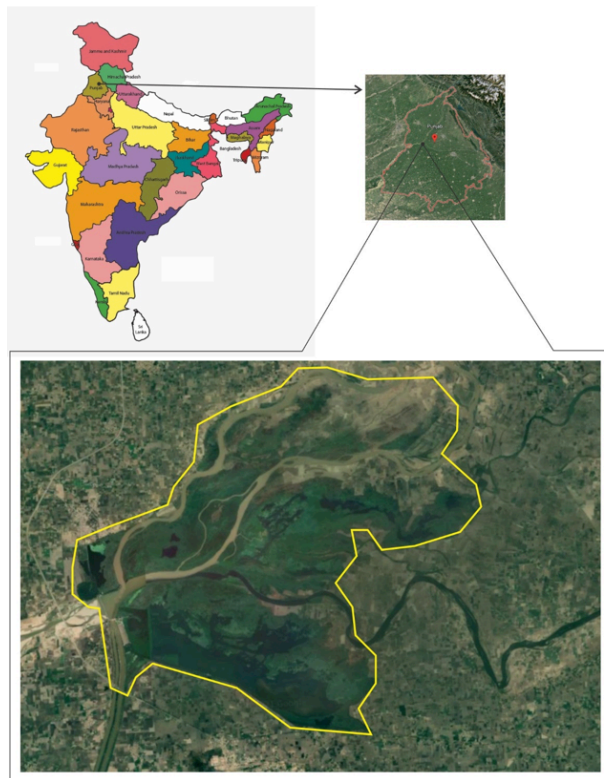


Image 1. Harike Wetland, the study site.

RESULTS AND DISCUSSION

During the present investigations, total of 225 bird species under 18 orders and 61 families were reported from the Harike wetland and its surrounding areas (Table 1). This wetland supports 113 migrant and 112 resident bird species. Overall, Passeriformes are the dominant order with 38% (85 species), consistent with their being the dominant avian taxa of India (Praveen et al. 2016). They were followed by Charadriiformes 16% (37 species), Anseriformes 8.4% (19 species), Pelecaniformes 7.6% (17 species), Accipitriformes 5.8% (13 species), Coraciiformes 3.6% (8 species), Gruiformes 3.1% (7 species), Columbiformes 2.7% (6 species), and Strigiformes 2.2% (5 species). Orders like Cuculiformes, Piciformes, Podicipediformes, and Suliformes were represented by 1.8% (4 species) followed by Galliformes and Ciconiiformes with 1.3% (3 species) each. Birds were also found from orders Apodiformes, Falconiformes, and Psittaciformes (Table 3).

Species represented by orders Anseriformes, Pelecaniformes, Charadriiformes, Ciconiiformes, Galliformes, Gruiformes, Podicipediformes, and Suliformes were the major water birds, the rest are wetland-dependent birds (Kumar et al. 2005). Relative

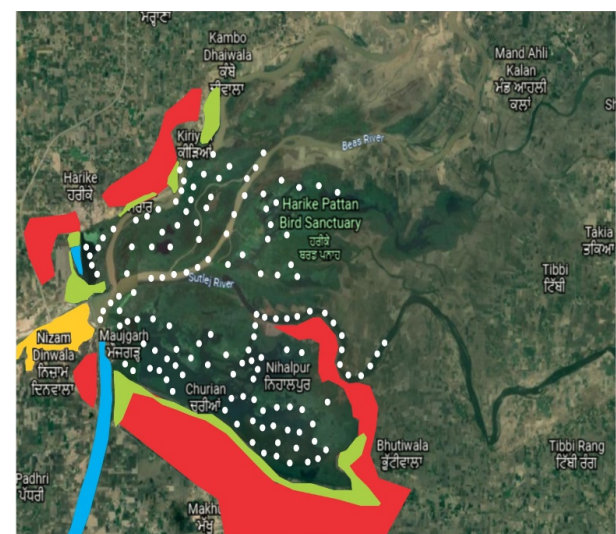
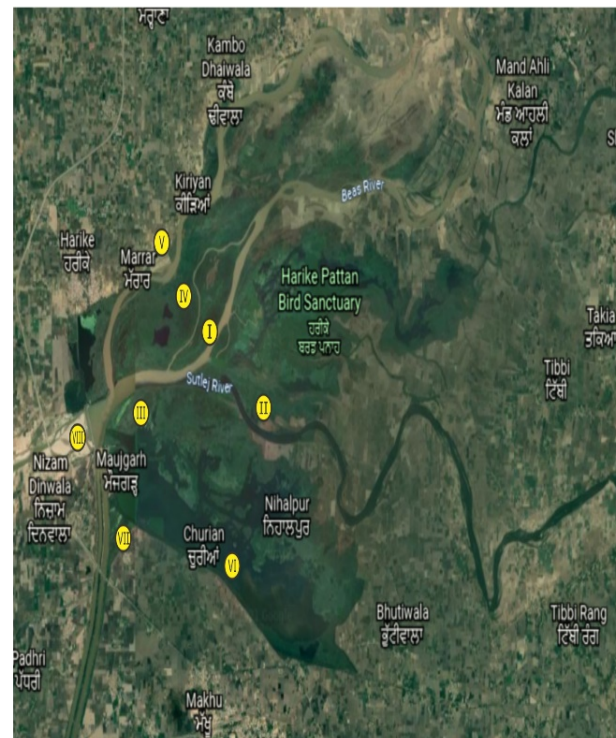


Image 2. Different transects and habitat surveyed during the studied period.

Image 2. Different transects and habitat surveyed during the studied period.

diversity data shows that family Anatidae was most diverse (19 species, RDi 8.444) with similar observations made at Basai wetland and Nangal wetland (Rai et al. 2019; Kaur & Brraich 2021), followed by Scolopacidae (14 species, RDi 6.22), Ardeidae (13 species, RDi 5.777), Accipitridae (12 species, RDi 5.333), Muscicapidae (11 species, RDi 4.888), Laridae and Motacillidae (10

species, 4.444), Cisticolidae (8 species, RDi 3.555), Rallidae (7 species, RDi 3.11), Charadriidae, Columbidae, Hirundinidae, and Sturnidae (6 species, RDi 2.666), Cuculidae, Estrildidae, Phylloscopidae, Podicipedidae, Strigidae, and Threskiornithidae (4 species, RDi 1.777), Acrocephalidae, Alaudidae, Alcedinidae, Ciconiidae, Laniidae, Leiothrichidae, Phalacrocoracidae, Phasianidae, Picidae, and Ploceidae (3 species, RDi 1.333) lastly Anhingidae, Bucerotidae, Burhinidae, Coraciidae, Dicruridae, Jacanidae, Locustellidae, Monarchidae, Nectariniidae, Oriolidae, Pandionidae, Pellorineidae, Pycnonotidae, Rostratulidae, Stenostiridae, Tytonidae, Upupidae, Vangidae, and Zosteropidae were poorly diverse representing 1 species each and RDi 0.444 (Table 2).

Data on relative abundance show that 111 species were Very common, 69 species were common, 37 species were Uncommon and eight species were rare in the area. A comparative analysis of residential status of observed species with relative abundance shows that out of 112 resident species, 65 species were very common, 34 common, 11 Uncommon, and two rare; among 17 summer migrants; seven species were very common, three common, six uncommon, and one rare and trend in winter migrants which were 96 in number: 40 species were very common, 32 common, 19 common, and five rare (Figure 1). The population trends of present species and relative abundance shows that 68 species which are decreasing globally were present, of which 33 were very common, which shows the importance of unique habitat in the wetland in increasing trends. Eighty-seven species were globally stable, and the status of 35 was unknown as per IUCN (2021) (Figure 2).

Wetlands support globally threatened species such as Ferruginous Duck, Black-tailed Godwit, River Tern, Eurasian Curlew, River Lapwing, Painted Stork, Red-necked Falcon, Rufous-vented Grass Babbler, Black-headed White Ibis, Alexandrine Parakeet, Oriental Darter categorized under Near Threatened, Greater Spotted Eagle, Common Pochard, Woolly-necked Stork, Bristled Grass-Warbler, Jerdon's Babbler, Horned Grebe were listed under vulnerable category by IUCN. Bristled Grass-Warbler and Jerdon's Babbler were earlier recorded from this wetland (Kazmierczak et al. 1998; Prasad 2008b; Sawant & Sudhagar 2013; Singh & Brraich 2021). Interestingly, Jerdon's Babbler was found with nesting material, which shows their probable breeding record at Harike Wetland.

Seasonal data show that 112 species (50%) are present throughout year, 96 species (43%) were found

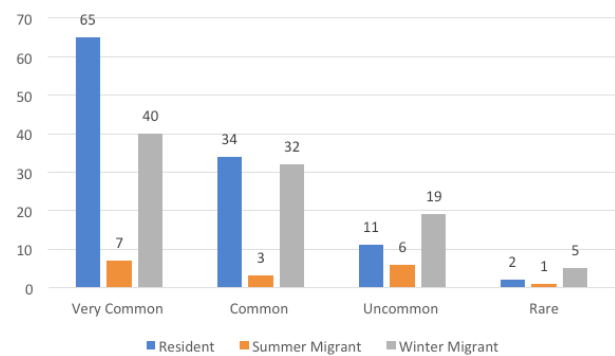


Figure 1. Comparison of residential status and abundance status of species in Harike Wetland.

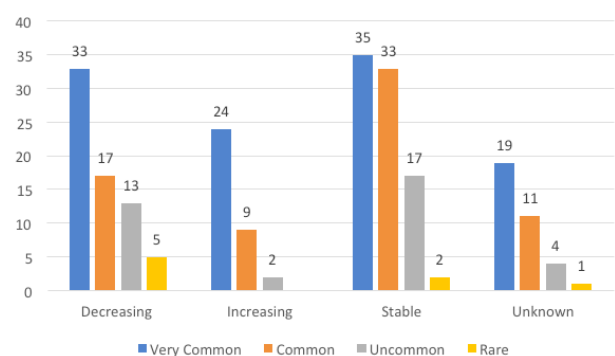


Figure 2. Relationship between population trends and abundance status of species at Harike Wetland.

in winter during migration, and the least number of species were found in summer (17 species; 7.6%). Habitat preference data revealed that combination of habitats like wetland, forest, waterbodies show the maximum number of birds, on the other hand build up, agriculture and wasteland show comparatively less bird diversity, resultantly it is concluded that to attract of more bird species wetland vegetation should be more diverse. Heterogenetic habitats and to the initiations of conservation measures always show more diversity (Burger 1985; Brown et al. 2001; Kushlan et al. 2002; Tu et al. 2020). Beside birds, wetlands are important habitats for reptiles like Gharial *Gavialis gangeticus* (Critically Endangered), mammals like Golden Jackal *Canis aureus*, Wild Boar *Sus scrofa*, Smooth-coated Otter *Lutrogale perspicillata* (Vulnerable), and Indus River Dolphin *Platanista gangetica* (Endangered). From diversity point of view, wetlands are most important in Punjab. Further, it is observed that wetland is highly human-dominated, and under severe pressure of resource extraction for various purposes. Wetlands and adjoining areas are facing land encroachment for agriculture, livelihood and

Table 1 . List of birds in different seasons and habitats with their conservation status.

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
Order: Accipitriformes							
1	Black Kite <i>Milvus lineatus</i> (Boddaert, 1783)	Accipitridae	Summer, Rainy, Autumn, Winters, Spring	Forest /Water bodies / Built up	Least Concern/ Stable	Resident	VC
2	Black-winged Kite <i>Elanus caeruleus</i> (Desfontaines, 1789)	Accipitridae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Water bodies/ Agriculture land/ Built Up	Least Concern/ Stable	Resident	VC
3	Booted Eagle <i>Hieraetus pennatus</i> (Gmelin, 1788)	Accipitridae	Autumn, Winters, Spring	Forest/ Water bodies	Least Concern/ Stable	Winter Migrant	UC
4	Crested Serpent-Eagle <i>Spilornis cheela</i> (Latham, 1790)	Accipitridae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Water bodies	Least Concern/ Stable	Resident	UC
5	Eurasian Sparrowhawk <i>Accipiter nisus</i> (Linnaeus, 1758)	Accipitridae	Autumn, Winters, Spring	Forest/ Water bodies	Least Concern/ Stable	Winter Migrant	C
6	Shikra <i>Accipiter badius</i> (Gmelin, 1788)	Accipitridae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Water bodies/ Built Up/ Agriculture	Least Concern/ Stable	Resident	VC
7	Steppe Eagle <i>Aquila nipalensis</i> Hodgson, 1833	Accipitridae	Autumn, Winters, Spring	Forest/ Water bodies	Endangered/ Decreasing	Resident	UC
8	Short-toed Snake-Eagle <i>Circaetus gallicus</i> (Gmelin, 1788)	Accipitridae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Water bodies	Least Concern/ Stable	Resident	UC
9	Greater Spotted Eagle <i>Clanga hastata</i> (Pallas, 1811)	Accipitridae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Water bodies	Vulnerable/ Decreasing	Resident	UC
10	Common Buzzard <i>Buteo buteo</i> Linnaeus, 1758	Accipitridae	Autumn, Winters, Spring	Forest/ Water bodies	Least Concern/ Stable	Winter Migrant	UC
11	Oriental Honey-Buzzard <i>Pernis ptilorhynchus</i> (Temminck, 1821)	Accipitridae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Water bodies	Least Concern/ Stable	Resident	C
12	Osprey <i>Pandion haliaetus</i> (Linnaeus, 1758)	Pandionidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Water bodies	Least Concern/ Increasing	Winter Migrant	C
13	Hen harrier <i>Circus cyaneus</i> (Linnaeus, 1766)	Accipitridae	Autumn, Winters, Spring	Forest/ Water bodies/Wasteland	Least Concern/ Decreasing	Winter Migrant	R
Order: Anseriformes							
14	Bar-headed Goose <i>Anser indicus</i> (Latham, 1790)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
15	Comb Duck <i>Sarkidiornis melanotos</i> (Pennant, 1769)	Anatidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Resident	VC
16	Common Pochard <i>Aythya ferina</i> (Linnaeus, 1758)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Vulnerable/ Decreasing	Winter Migrant	VC
17	Common Teal <i>Anas crecca</i> Linnaeus, 1758	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	VC
18	Cotton Teal <i>Nettapus coromandelianus</i> (Gmelin, 1789)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Winter Migrant	UC
19	Eurasian Wigeon <i>Anas penelope</i> Linnaeus, 1758	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
20	Gadwall <i>Anas strepera</i> Linnaeus, 1758	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
21	Garganey <i>Anas querquedula</i> Linnaeus, 1758	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
22	Grey-leg Goose <i>Anser anser</i> (Linnaeus, 1758)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
23	Indian Spotbill Duck <i>Anas poecilorhyncha</i> J.R. Forester, 1781	Anatidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies/ Agriculture	Least Concern/ Decreasing	Resident	VC
24	Lesser Whistling Duck <i>Dendrocygna javanica</i> (Horsfield, 1821)	Anatidae	Summer, Rainy	Wetland/ Waterbodies/ Agriculture	Least Concern/ Decreasing	Summer Migrant	VC
25	Northern Shoveller <i>Anas clypeata</i> Linnaeus, 1758	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
26	Northern Pintail <i>Anas acuta</i> Linnaeus, 1758	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
27	Red Crested Poachard <i>Netta rufina</i> (Pallas, 1773)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	VC
28	Ruddy Shelduck <i>Tadorna ferruginea</i> (Pallas, 1764)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	VC
29	Common Shelduck <i>Tadorna tadorna</i> (Linnaeus, 1758)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
30	Mallard <i>Anas platyrhynchos</i> Linnaeus, 1758	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
31	Ferruginous Duck <i>Aythya nyroca</i> (Guldenstadt, 1770)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Near Threatened/ Decreasing	Winter Migrant	VC
32	Tufted Duck <i>Aythya fuligula</i> (Linnaeus, 1758)	Anatidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Winter Migrant	VC
Order: Apodiformes							
33	House Swift <i>Apus affinis</i> (J.E. Gray, 1830)	Apodidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland	Least Concern/ Increasing	Resident	VC
34	Alpine Swift <i>Tachymarptis melba</i> (Linnaeus, 1758)	Apodidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland	Least Concern/ Stable	Resident	VC
Order: Charadriiformes							
35	Black-tailed Godwit <i>Limosa limosa</i> (Linnaeus, 1758)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Wasteland	Near Threatened/ Decreasing	Winter Migrant	VC
36	Black-winged Stilt <i>Himantopus himantopus</i> (Linnaeus, 1758)	Recurvirostridae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies/ Wasteland/ Agriculture	Least Concern/ Increasing	Resident	VC
37	Common Redshank <i>Tringa totanus</i> (Linnaeus, 1758)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	VC
38	Common Sandpiper <i>Actitis hypoleucos</i> Linnaeus, 1758	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
39	Common Snipe <i>Gallinago gallinago</i> (Linnaeus, 1758)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	C
40	Dunlin <i>Calidris alpina</i> (Linnaeus, 1758)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
41	Eurasian Thick-Knee <i>Burhinus oedicnemus</i> (Linnaeus, 1758)	Burhinidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland	Least Concern/ Decreasing	Resident	C
42	Green Sandpiper <i>Tringa ochropus</i> Linnaeus, 1758	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
43	Greenshank <i>Tringa nebularia</i> (Gunner, 1767)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Winter Migrant	VC
44	Small Pratincole <i>Glareola lactea</i> Temminck, 1820	Glareolidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Unknown	Resident	C

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
45	Little Ringed Plover <i>Charadrius dubius</i> Scopoli, 1786	Charadriidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Winter Migrant	VC
46	Common Ringed Plover <i>Charadrius hiaticula</i> Linnaeus, 1758	Charadriidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	C
47	Little Stint <i>Calidris minuta</i> (Leisler, 1812)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
48	Marsh Sandpiper <i>Tringa stagnatilis</i> (Bechstein, 1803)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	C
49	Pheasant Tailed Jacana <i>Hydrophasianus chirurgus</i> (Scopoli, 1786)	Jacanidae	Summer, Rainy	Wetland/ Waterbodies	Least Concern/ Decreasing	Summer Migrant	VC
50	Pied Avocet <i>Recurvirostra avosetta</i> Linnaeus, 1758	Recurvirostridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	VC
51	Red-wattled Lapwing <i>Vanellus indicus</i> (Boddaert, 1783)	Charadriidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland	Least Concern/ Unknown	Resident	VC
52	River Lapwing <i>Vanellus duvaucelii</i> (Lesson, 1826)	Charadriidae	Autumn, Winters, Spring	Waterbodies/ Wetland	Near Threatened/ Decreasing	Winter Migrant	C
53	Ruff <i>Philomachus pugnax</i> (Linnaeus, 1758)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
54	Spotted Redshank <i>Tringa erythropus</i> (Pallas, 1764)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Winter Migrant	C
55	Temminck Stint <i>Calidris temminckii</i> (Leisler, 1812)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	C
56	White-tailed Lapwing <i>Vanellus leucurus</i> (Lichtenstein, 1823)	Charadriidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	VC
57	Wood Sandpiper <i>Tringa glareola</i> Linnaeus, 1758	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Winter Migrant	VC
58	Eurasian Curlew <i>Numenius arquata</i> (Linnaeus, 1758)	Scolopacidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Near threatened/ Decreasing	Winter Migrant	C
59	Yellow Wattled Lapwing <i>Vanellus malabaricus</i> (Boddaert, 1783)	Charadriidae	Summer, Rainy	Wasteland	Least Concern/ Stable	Summer Migrant	UC
60	Oriental Pratincole <i>Glareola maldivarum</i> J.R. Forster, 1795	Glareolidae	Autumn, Winters, Spring	Waterbodies	Least Concern/ Decreasing	Summer Migrant	UC
61	Greater Painted Snipe <i>Rostratula benghalensis</i> (Linnaeus, 1758)	Rostratulidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	UC
62	Black-headed Gull <i>Larus ridibundus</i> Linnaeus, 1766	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	C
63	Brown-headed Gull <i>Larus brunnicephalus</i> Jerdon, 1840	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Winter Migrant	C
64	Gull-billed Tern <i>Gelochelidon nilotica</i> (Gmelin, 1789)	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	C
65	Pallas's Gull <i>Larus ichthyæus</i> Pallas, 1773	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
66	Yellow-legged Gull <i>Larus cachinnans</i> Pallas, 1811	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
67	Heuglin's Gull <i>Larus heuglini</i> Bree, 1876	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	C
68	Little Gull <i>Larus minutus</i> Pallas, 1776	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	C

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
69	River Tern <i>Sterna aurantia</i> J.E. Gray, 1831	Laridae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Near Threatened/ Decreasing	Resident	VC
70	Little Tern <i>Sterna albifrons</i> Pallas, 1764	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	UC
71	Whiskered Tern <i>Chlidonias hybridus</i> (Pallas, 1811)	Laridae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern / Stable	Winter Migrant	VC
Order: Ciconiiformes							
72	Asian Openbill Stork <i>Anastomus oscitans</i> (Boddaert, 1783)	Ciconiidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Resident	C
73	Painted Stork <i>Mycteria leucocephala</i> (Pennant, 1769)	Ciconiidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Near Threatened/ Decreasing	Resident	VC
74	Woolly-necked Stork <i>Ciconia episcopus</i> (Boddaert, 1783)	Ciconiidae	Autumn, Winters, Spring	Wasteland/ Waterbodies/ Wetland	Vulnerable/ Decreasing	Winter Migrant	C
Order: Columbiformes							
75	Rock Pigeon <i>Columba livia</i> Gmelin, 1789	Columbidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Built up/ Agriculture	Least Concern/ Decreasing	Resident	VC
76	Eurasian Collared Dove <i>Streptopelia decaocto</i> (Frisvaldszky, 1838)	Columbidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Increasing	Resident	C
77	Laughing Dove <i>Streptopelia senegalensis</i> (Linnaeus, 1766)	Columbidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	C
78	Red Turtle Dove <i>Streptopelia tranquebarica</i> (Hermann, 1804)	Columbidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Decreasing	Resident	C
79	Spotted Dove <i>Streptopelia chinensis</i> (Scopoli, 1786)	Columbidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built up	Least Concern/ Increasing	Resident	C
80	Yellow Footed Green Pigeon <i>Treron phoenicoptera</i> (Latham, 1790)	Columbidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built up	Least Concern/ Unknown	Resident	VC
Order: Coraciiformes							
81	Common Kingfisher <i>Alcedo atthis</i> (Linnaeus, 1758)	Alcedinidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wetland/ Waterbodies	Least Concern/ Unknown	Resident	VC
82	Eurasian Hoopoe <i>Upupa epops</i> Linnaeus, 1758	Upupidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wetland/ Waterbodies/ Built up	Least Concern/ Decreasing	Resident	VC
83	Green Bee-Eater <i>Merops orientalis</i> Latham, 1801	Meropidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Increasing	Resident	VC
84	Indian Grey Hornbill <i>Ocyrceros birostris</i> (Scopoli, 1786)	Bucerotidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Resident	VC
85	Indian Roller <i>Coracias benghalensis</i> (Linnaeus, 1758)	Coraciidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Increasing	Resident	C
86	White-Throated Kingfisher <i>Halcyon smyrnensis</i> (Linnaeus, 1758)	Alcedinidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wetland/ Waterbodies/ Built up	Least Concern/ Unknown	Resident	VC
87	Lesser Pied Kingfisher <i>Ceryle rudis</i> (Linnaeus, 1758)	Alcedinidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wetland/ Waterbodies	Least Concern/ Unknown	Resident	VC
88	Blue Tailed Bee Eater <i>Merops philippinus</i> Linnaeus, 1766	Meropidae	Summer, Rainy	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Summer Migrant	VC
Order: Cuculiformes							
89	Asian Koel <i>Eudynamis scolopacea</i> (Linnaeus, 1758)	Cuculidae	Summer, Rainy	Forest/ Waterbodies/ Built up	Least Concern/ Stable	Summer Migrant	VC

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90	Greater Coucal <i>Centropus sinensis</i> (Stephens, 1815)	Cuculidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies/ Built up	Least Concern/ Stable	Resident	VC
91	Pied Crested Cuckoo <i>Clamator jacobinus</i> (Boddaert, 1783)	Cuculidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Resident	C
92	Common Hawk-cuckoo <i>Hierococcyx varius</i> (Vahl, 1797)	Cuculidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Resident	C
Order: Falconiformes							
93	Peregrine Falcon <i>Falco peregrinus</i> Tunstall, 1771	Falconidae	Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Resident	R
94	Red necked Falcon <i>Falco chicquera</i> Daudin, 1800	Falconidae	Autumn, Winters, Spring	Forest/Waterbodies	Near Threatened/ Decreasing	Winter Migrant	R
Order: Galliformes							
95	Grey Francolin <i>Francolinus pondicerianus</i> (Gmelin, 1789)	Phasianidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/Forest/ Built Up	Least Concern/ Stable	Resident	VC
96	Indian Peafowl <i>Pavo cristatus</i> Linnaeus, 1758	Phasianidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Wasteland/ Built up	Least Concern/ Stable	Resident	VC
97	Black Francolin <i>Francolinus francolinus</i> (Linnaeus, 1766)	Phasianidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland	Least Concern/ Stable	Resident	C
Order: Gruiformes							
98	Common Coot <i>Fulica atra</i> Linnaeus, 1758	Rallidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
99	Common Moorhen <i>Gallinula chloropus</i> (Linnaeus, 1758)	Rallidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Stable	Resident	VC
100	Purple Moorhen <i>Porphyrio porphyrio</i> (Linnaeus, 1758)	Rallidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Resident	VC
101	White-Breasted Waterhen <i>Amaurornis phoenicurus</i> (Pennant, 1769)	Rallidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies/ Agriculture	Least Concern/ Unknown	Resident	VC
102	Watercock <i>Gallicrex cinerea</i> (Gmelin, 1789)	Rallidae	Summer, Rainy	Wetland/ Waterbodies/ Agriculture	Least Concern/ Decreasing	Summer Migrant	C
103	Baillon's crane <i>Zapornia pusilla</i> (Pallas, 1776)	Rallidae	Summer, Rainy	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	R
104	Ruddy-breasted Crane <i>Porzana fusca</i> (Linnaeus, 1766)	Rallidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	UC
Order: Passeriformes							
105	Long Tail Shrike <i>Lanius schach</i> Linnaeus, 1758	Laniidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Unknown	Resident	C
106	Ashy Prinia <i>Prinia socialis</i> Sykes, 1832	Cisticolidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
107	Asian Pied Starling <i>Sturnus contra</i> Linnaeus, 1758	Sturnidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ waterbodies/ Built Up	Least Concern/ Increasing	Resident	VC
108	Bank Myna <i>Acridotheres ginginianus</i> (Latham, 1790)	Sturnidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Increasing	Resident	VC
109	Barn Swallow <i>Hirundo rustica</i> Linnaeus, 1758	Hirundinidae	Summer, Rainy	Wasteland/ Waterbodies	Least Concern/ Decreasing	Summer Migrant	VC
110	Baya Weaver Bird <i>Ploceus philippinus</i> (Linnaeus, 1766)	Ploceidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Resident	VC
111	Baybacked Shrike <i>Lanius vittatus</i> Valenciennes, 1826	Laniidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC

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112	Bengal Bushlark <i>Mirafra assamica</i> Horsfield, 1840	Alaudidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Stable	Resident	C
113	Black Drongo <i>Dicrurus macrocercus</i> Vieillot, 1817	Dicruridae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built Up	Least Concern/ Unknown	Resident	VC
114	Black Redstart <i>Phoenicurus ochruros</i> (Gmelin, SG, 1774)	Muscicapidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built Up	Least Concern/ Increasing	Winter Migrant	VC
115	Black-headed Bunting <i>Emberiza melanocephala</i> Scopoli, 1769	Emberizidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	C
116	Bluethroat <i>Luscinia svecica</i> (Linnaeus, 1758)	Muscicapidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Winter Migrant	VC
117	Blyth's Reed Warbler <i>Acrocephalus dumetorum</i> Blyth, 1849	Acrocephalidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	C
118	Booted Warbler <i>Hippolais caligata</i> (Lichtenstein, 1823)	Acrocephalidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	UC
119	Brahminy Myna <i>Sturnus pagodarum</i> (Gmelin, 1789)	Sturnidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built Up	Least Concern/ Unknown	Resident	VC
120	Brown Rock-Chat <i>Cercomela fusca</i> (Blyth, 1851)	Muscicapidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built Up	Least Concern/ Unknown	Resident	VC
121	Brown Shrike <i>Lanius cristatus</i> Linnaeus, 1758	Laniidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	VC
122	Citrine Wagtail <i>Motacilla citreola</i> Pallas, 1776	Motacillidae	Autumn, Winters, Spring	Wetland/ Wasteland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
123	Common Babbler <i>Turdoides caudatus</i> (Dumont, 1823)	Leiothrichidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
124	Common Chiffchaff <i>Phylloscopus collybita</i> (Vieillot, 1817)	Phylloscopidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	VC
125	Common Myna <i>Acridotheres tristis</i> (Linnaeus, 1766)	Sturnidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built Up	Least Concern/ Increasing	Resident	VC
126	Greater Whitethroat <i>Sylvia communis</i> (Latham, 1787)	Sylviidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Increasing	Winter Migrant	UC
127	Crested Lark <i>Galerida cristata</i> (Linnaeus, 1758)	Alaudidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Decreasing	Resident	C
128	Golden Oriole <i>Oriolus oriolus</i> (Linnaeus, 1758)	Oriolidae	Summer, Rainy	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Summer Migrant	C
129	Gray-Throated Martin <i>Riparia chinensis</i> (Gray, JE, 1830)	Hirundinidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Decreasing	Resident	VC
130	Plain Martin <i>Riparia paludicola</i> (Vieillot, 1817)	Hirundinidae	Summer, Rainy	Wasteland/ Waterbodies	Least Concern/ Decreasing	Summer Migrant	VC
131	Grey Wagtail <i>Motacilla cinerea</i> Tunstall, 1771	Motacillidae	Autumn, Winters, Spring	Wetland/ Wasteland/ Waterbodies	Least Concern/ Stable	Winter Migrant	VC
132	House Crow <i>Corvus splendens</i> Vieillot, 1817	Corvidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built Up	Least Concern/ Stable	Resident	VC
133	Indian Robin <i>Saxicoloides fulicata</i> (Linnaeus, 1776)	Muscicapidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC

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134	Indian Silverbill <i>Lonchura malabarica</i> (Linnaeus, 1758)	Estrildidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
135	Jungle Babbler <i>Turdoides striatus</i> (Dumont, 1823)	Leiothrichidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies/ Built Up	Least Concern/ Stable	Resident	VC
136	Large Grey Babbler <i>Turdoides malcolmi</i> (Sykes, 1832)	Leiothrichidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
137	Lesser Whitethroat <i>Sylvia curruca</i> (Linnaeus, 1758)	Sylviidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Winter Migrant	UC
138	Oriental Magpie Robin <i>Copsychus saularis</i> (Linnaeus, 1758)	Muscicapidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
139	Indian White Eye <i>Zosterops palpebrosa</i> (Temminck, 1824)	Zosteropidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	C
140	Paddyfield Pipit <i>Anthus rufulus</i> Vieillot, 1818	Motacillidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	C
141	Pied Bushchat <i>Saxicola caprata</i> (Linnaeus, 1766)	Muscicapidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	C
142	Plain Prinia <i>Prinia inornata</i> Sykes, 1832	Cisticolidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
143	Rufous-vented grass babbler <i>Prinia burnesii</i> (Blyth, 1844)	Pellorneidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Near Threatened/ Decreasing	Winter Migrant	UC
144	Yellow-bellied Prinia <i>Prinia flaviventris</i> (Delessert, 1840)	Cisticolidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	C
145	Purple Sunbird <i>Nectarinia asiatica</i> (Latham, 1790)	Nectariniidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
146	Red-Rumped Swallow <i>Hirundo daurica</i> Linnaeus, 1771	Hirundinidae	Summer, Rainy	Waterbodies/ Wasteland/	Least Concern/ Stable	Summer Migrant	VC
147	Red-vented Bulbul <i>Pycnonotus cafer</i> (Linnaeus, 1766)	Pycnonotidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Increasing	Resident	VC
148	Richard's Pipit <i>Anthus richardi</i> Vieillot, 1818	Motacillidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Winter Migrant	C
149	Rosy Pipit <i>Anthus roseatus</i> Blyth, 1847	Motacillidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Winter Migrant	C
150	Indian Tree Pie <i>Dendrocitta vagabunda</i> (Latham, 1790)	Corvidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Decreasing	Resident	VC
151	Siberian Chiffchaff <i>Phylloscopus tristis</i> (Blyth, 1843)	Phylloscopidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Unknown	Resident	C
152	Siberian Stonechat <i>Saxicola maurus</i> (Pallas, 1773)	Muscicapidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	C
153	Sind Sparrow <i>Passer pyrrhonotus</i> Blyth, 1844	Passeridae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	C
154	Scaly-breasted Munia <i>Lonchura punctulata</i> (Linnaeus, 1758)	Estrildidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Resident	VC
155	Zitting Cisticola <i>Cisticola juncidis</i> (Rafinesque, 1810)	Cisticolidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Increasing	Resident	VC
156	Sykes's Warbler <i>Iduna rama</i> (Sykes, 1832)	Acrocephalidae	Summer, Rainy, Autumn, Winters, Spring	Wasteland/ Waterbodies	Least Concern/ Stable	Resident	C

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
157	Tailor Bird <i>Orthotomus sutorius</i> (Pennant, 1769)	Cisticolidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/Waterbodies	Least Concern/Stable	Resident	VC
158	Tree Pipit <i>Anthus trivialis</i> (Linnaeus, 1758)	Motacillidae	Autumn, Winters, Spring	Forest/Wasteland/Waterbodies	Least Concern/Decreasing	Winter Migrant	VC
159	Black-headed Munia <i>Lonchura malacca</i> (Linnaeus, 1766)	Estrildidae	Autumn, Winters, Spring	Wasteland/Waterbodies/Forest	Least Concerned/Stable	Winter Migrant	C
160	Verditer Flycatcher <i>Eumyias thalassina</i> (Swainson, 1838)	Muscicapidae	Autumn, Winters, Spring	Forest/Wasteland/Waterbodies	Least Concern/Stable	Winter Migrant	C
161	Western Yellow Headed Wagtail <i>Motacilla flava</i> Linnaeus, 1758	Motacillidae	Autumn, Winters, Spring	Wetland/Waterbodies//Wasteland	Least Concern/Decreasing	Winter Migrant	C
162	White Tailed Stonechat <i>Saxicola leucurus</i> (Blyth, 1847)	Muscicapidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Wasteland/Waterbodies	Least Concern/Stable	Resident	C
163	White Wagtail <i>Motacilla alba</i> Linnaeus, 1758	Motacillidae	Autumn, Winters, Spring	Wetland/Waterbodies/Wasteland	Least Concern/Stable	Winter Migrant	C
164	Wire Tailed Swallow <i>Hirundo smithii</i> Leach, 1818	Hirundinidae	Summer, Rainy	Wasteland/Waterbodies	Least Concern/Increasing	Winter Migrant	VC
165	Yellow Eyed Babbler <i>Chrysomma sinense</i> (Gmelin, 1789)	Paradoxornithidae	Summer, Rainy, Autumn, Winters, Spring	Forest/waterbodies/Wasteland	Least Concern/Stable	Resident	C
166	Streaked Weaver <i>Ploceus manyar</i> (Horsfield, 1821)	Ploceidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Stable	Resident	VC
167	Indian Paradise-Flycatcher <i>Terpsiphone paradisi</i> (Linnaeus, 1758)	Monarchidae	Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Stable	Summer Migrant	UC
168	European Starling <i>Sturnus vulgaris</i> Linnaeus, 1758	Sturnidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Decreasing	Resident	VC
169	Eurasian Wryneck <i>Jynx torquilla</i> Linnaeus, 1758	Picidae	Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Decreasing	Winter Migrant	UC
170	Grey Headed Canary Flycatcher <i>Culicicapa ceylonensis</i> (Swainson, 1820)	Stenostiridae	Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Stable	Winter Migrant	UC
171	Common Woodshrike <i>Tephrodornis pondicerianus</i> (Gmelin, 1789)	Vangidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Stable	Resident	UC
172	House Sparrow <i>Passer domesticus</i> (Linnaeus, 1758)	Passeridae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Decreasing	Resident	C
173	Jungle Myna <i>Acridotheres fuscus</i> (Wagler, 1827)	Sturnidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Decreasing	Resident	C
174	Water Pipit <i>Anthus spinoletta</i> (Linnaeus, 1758)	Motacillidae	Autumn, Winters, Spring	Waterbodies/Wasteland	Least concern/Stable	Winter Migrant	C
175	Red-Headed Bunting <i>Emberiza bruniceps</i> Brandt, 1841	Emberizidae	Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Stable	Winter Migrant	C
176	Red Avadavat <i>Amandava amandava</i> (Linnaeus, 1758)	Estrildidae	Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Stable	Winter Migrant	UC
177	Streak Throated Swallow <i>Hirundo fluvicola</i> Blyth, 1855	Hirundinidae	Summer, Rainy, Autumn, Winters, Spring	Waterbodies/Wasteland	Least Concern/Increasing	Resident	C
178	Indian Bushlark <i>Mirafra erythroptera</i> Blyth, 1845	Alaudidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies/Wasteland	Least Concern/Stable	Resident	C

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
179	Rufous-fronted Prinia <i>Prinia buchanani</i> Blyth, 1844	Cisticolidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Resident	UC
180	Gray-breasted Prinia <i>Prinia hodgsonii</i> Blyth, 1844	Cisticolidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Resident	C
181	Long-billed Pipit <i>Anthus similis</i> Jerdon, 1840	Motacillidae	Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Winter Migrant	C
182	Hume's Warbler <i>Phylloscopus humei</i> (Brooks, 1878)	Phylloscopidae	Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Winter Migrant	UC
183	Black Breasted weaver <i>Ploceus benghalensis</i> (Linnaeus, 1758)	Ploceidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Resident	C
184	Graceful Prinia <i>Prinia gracilis</i> (Lichtenstein, 1823)	Cisticolidae	Summer, Rainy, Autumn, Winters, Spring	Waterbodies/ Wasteland	Least Concern/ Stable	Resident	C
185	Asian brown flycatcher <i>Muscicapa dauurica</i> Pallas, 1811	Muscicapidae	Summer, Rainy	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Summer Migrant	C
186	Variable wheatear <i>Oenanthe picata</i> (Blyth, 1847)	Muscicapidae	Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland	Least Concern/ Stable	Winter Migrant	C
187	Bristled Grass-Warbler <i>Chaetornis striatus</i> (Jerdon, 1841)	<u>Locustellidae</u>	Summer, Rainy	Waterbodies/ Wasteland/Forest	Vulnerable/ Decreasing	Summer Migrant	R
188	Jerdon's Babbler <i>Chrysomma altirostre</i> Jerdon, 1862	Paradoxornithidae	Summer, Rainy, Autumn, Winters, Spring	Waterbodies/ Wasteland/Forest	Vulnerable/ Decreasing	Resident	UC
189	Sulphur-bellied warbler <i>Phylloscopus griseolus</i> Blyth, 1847	Phylloscopidae	Autumn, Winters, Spring	Forest/Wasteland/ Waterbodies	Least Concern/ Stable	Winter Migrant	UC
Order: Pelecaniformes							
190	Black Headed White Ibis <i>Threskiornis melanocephalus</i> (Latham, 1790)	Threskiornithidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Forest/ Waterbodies	Near Threatened/ Decreasing	Resident	C
191	Glossy Ibis <i>Plegadis falcinellus</i> (Linnaeus, 176	Threskiornithidae	Autumn, Winters, Spring	Waterbodies/ Wetland/ Forest	Least Concern / Decreasing	Winter Migrant	VC
192	Cattle Egret <i>Bubulcus ibis</i> (Linnaeus, 1758)	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies/ Wasteland/ Agriculture/ Built Up	Least Concern/ Increasing	Resident	VC
193	Eurasian Spoonbill <i>Platalea leucorodia</i> Linnaeus, 1758	Threskiornithidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	UC
194	Grey Heron <i>Ardea cinerea</i> Linnaeus, 1758	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland / Waterbodies	Least Concern/ Unknown	Resident	VC
195	Indian Pond Heron <i>Ardeola grayii</i> (Sykes, 1832)	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies/ Agriculture	Least Concern/ Unknown	Resident	VC
196	Intermediate Egret <i>Egretta intermedia</i> Wagler, 1829	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland and Waterbodies/ Agriculture	Least Concern/ Decreasing	Resident	VC
197	Great Egret <i>Egretta alba</i> Linnaeus, 1758	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland and Waterbodies	Least Concern/ Unknown	Resident	C
198	Little Egret <i>Egretta garzetta</i> (Linnaeus, 1766)	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Resident	VC
199	Night Heron <i>Nycticorax nycticorax</i> (Linnaeus, 1758)	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland / Waterbodies	Least Concern/ Decreasing	Resident	VC

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
200	Purple Heron <i>Ardea purpurea</i> Linnaeus, 1766	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland / Waterbodies	Least Concern/ Decreasing	Resident	VC
201	Red Naped Ibis <i>Pseudibis papillosa</i> (Temminck, 1824)	Threskiornithidae	Summer, Rainy, Autumn, Winters, Spring	Wetland / Waterbodies/ Agriculture	Least Concern/ Decreasing	Resident	VC
202	Yellow Bittern <i>Ixobrychus sinensis</i> (Gmelin, 1789)	Ardeidae	Summer, Rainy	Wetland / Waterbodies	Least Concern/ Unknown	Summer Migrant	UC
203	Cinnamon Bittern <i>Ixobrychus cinnamomeus</i> (Gmelin, 1789)	Ardeidae	Summer, Rainy	Wetland / Waterbodies	Least Concern/ Stable	Summer Migrant	UC
204	Striated Heron <i>Butorides striata</i> (Linnaeus, 1758)	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland / Waterbodies	Least Concern/ Decreasing	Resident	UC
205	Great Bittern <i>Botaurus stellaris</i> (Linnaeus, 1758)	Ardeidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Winter Migrant	R
206	Black Bittern <i>Dupetor flavicollis</i> (Latham, 1790)	Ardeidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Summer Migrant	UC
Order: Piciformes							
207	Brown Headed Barbet <i>Megalaima zeylanica</i> (Gmelin, 1788)	Megalaimidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies	Least Concern/ Stable	Resident	VC
208	Coppersmith Barbet <i>Megalaima haemacephala</i> (P.L.S. Müller, 1776)	Megalaimidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies	Least Concern/ Increasing	Resident	C
209	Lesser Goldenbacked Woodpecker <i>Dinopium benghalense</i> (Linnaeus, 1758)	Picidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies	Least Concern/ Stable	Resident	C
210	Yellow Crowned Woodpecker <i>Leiopicus mahrattensis</i> (Latham, 1801)	Picidae	Summer, Rainy, Autumn, Winters, Spring	Forest/ Waterbodies	Least Concern/ Stable	Resident	UC
Order: Podicipediformes							
211	Little Grebe <i>Tachybaptus ruficollis</i> (Pallas, 1764)	Podicipedidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Decreasing	Resident	VC
212	Great Crested Grebe <i>Podiceps cristatus</i> (Linnaeus, 1758)	Podicipedidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	UC
213	Black-necked Grebe <i>Podiceps nigricollis</i> Brehm, 1831	Podicipedidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	UC
214	Horned Grebe <i>Podiceps auritus</i> (Linnaeus, 1758)	Podicipedidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Vulnerable/ Decreasing	Winter Migrant	R
Order: Psittaciformes							
215	Alexandrine Parakeet <i>Psittacula eupatria</i> (Linnaeus, 1766)	Psittaculidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Near Threatened/ Decreasing	Resident	UC
216	Rose Ringed Parakeet <i>Psittacula krameri</i> (Scopoli, 1769)	Psittaculidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Increasing	Resident	VC
Order: Strigiformes							
217	Barn Owl <i>Tyto alba</i> (Scopoli, 1769)	Tytonidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Resident	UC
218	Indian Scops Owl <i>Otus bakkamoena</i> Pennant, 1769	Strigidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Resident	R
219	Spotted Owlet <i>Athene brama</i> (Temminck, 1821)	Strigidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Resident	VC
220	Short-eared Owl <i>Asio flammeus</i> (Pontoppidan, 1763)	Strigidae	Autumn, Winters, Spring	Forest/Waterbodies	Least concern/ Decreasing	Winter Migrant	UC

	Name/ Scientific name	Family	Seasons	Preferred habitat	IUCN Status/ Population trends	Migratory/ Residential status	Abundance
221	Rock Eagle-Owl <i>Bubo bubo</i> (Linnaeus, 1758)	Strigidae	Summer, Rainy, Autumn, Winters, Spring	Forest/Waterbodies	Least Concern/ Stable	Winter Migrant	C
Order: Suliformes							
222	Great Cormorant <i>Phalacrocorax carbo</i> (Linnaeus, 1758)	Phalacrocoracidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Increasing	Resident	C
223	Little Cormorant <i>Phalacrocorax niger</i> (Vieillot, 1817)	Phalacrocoracidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Resident	VC
224	Indian Cormorant <i>Phalacrocorax fuscicollis</i> Stephens, 1826	Phalacrocoracidae	Autumn, Winters, Spring	Wetland/ Waterbodies	Least Concern/ Unknown	Winter Migrant	C
225	Oriental Darter <i>Anhinga melanogaster</i> Pennant, 1769	Anhingidae	Summer, Rainy, Autumn, Winters, Spring	Wetland/ Waterbodies	Near Threatened/ Decreasing	Resident	VC

Table 2. Showing the Relative diversity (RDi) of various avian families at Harike Wildlife Sanctuary.

Avian families	Number of species	RDi value
Accipitridae	12	5.333
Acrocephalidae, Alaudidae, Alcedinidae, Ciconiidae, Laniidae, Leiothrichidae, Phalacrocoracidae, Phasianidae, Picidae, Ploceidae	3	1.333
Apodidae, Corvidae, Emberizidae, Falconidae, Glareolidae, Megalaimidae, Meropidae, Paradoxornithidae, Passeridae, Psittaculidae, Recurvirostridae, Sylviidae	2	0.888
Anatidae	19	8.444
Anhingidae, Bucerotidae, Burhinidae, Coraciidae, Dicruridae, Jacanidae, Locustellidae, Monarchidae, Nectariniidae, Oriolidae, Pandionidae, Pellorneidae, Pycnonotidae, Rostratulidae, Stenostiridae, Tytonidae, Upupidae, Vangidae, Zosteropidae	1	0.444
Ardeidae	13	5.777
Charadriidae, Columbidae, Hirundinidae, Sturnidae	6	2.666
Cisticolidae	8	3.555
Cuculidae, Estrildidae, Phylloscopidae, Podicipedidae, Strigidae, Threskiornithidae	4	1.777
Laridae, Motacillidae	10	4.444
Muscicapidae	11	4.888
Rallidae	7	3.11
Scolopacidae	14	6.22

Table 3. Showing the percentage of birds in different orders.

Avian Orders	Number of species	Percentage
Passeriformes	85	37.77%
Charadriiformes	37	16.44%
Anseriformes	19	8.44%
Pelecaniformes	17	7.55%
Accipitriformes	13	5.77%
Coraciiformes	8	3.55%
Gruiformes	7	3.11%
Columbiformes	6	2.66%
Strigiformes	5	2.22%
Cuculiformes, Piciformes, Podicipediformes, Suliformes	4	1.77%
Galliformes, Ciconiiformes	3	1.33%
Apodiformes, Falconiformes, Psittaciformes	2	0.88%

other commercial activities. Similar observations have been made by Singh et al. (2020). In a highly populated country like India with less resources, resolving this issue is a tough task. Awareness among local populations with combined efforts of researchers, conservators, stake holders and government agencies can support sustainability of avifaunal diversity.

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