

## Status of avifauna at the selected waterlogged areas of Aligarh district, Uttar Pradesh

The urban waterlogged areas are the undeveloped residential low-lying landscape that receives water from domestic sewage and rainfall drainage. They are characterized by shallow water overlying the interspersed soil and dominated by submerged or emergent aquatic vegetation. These areas have been considered highly productive habitats for diverse fauna species (Rajpar et al. 2019).



Garbage dump at one of the sites. © Mirza Altaf Baig.

Within the last two decades, ornithological studies in district Aligarh covered several aspects such as roosting behaviour (Khan & Zarreen 2010), the impact of urbanization (Akram et al. 2015; Siddiqui et al. 2019), and community structure (Khan et al. 1993). This study is an attempt to examine the avian population that utilizes waterlogged areas around the Aligarh Muslim University campus.

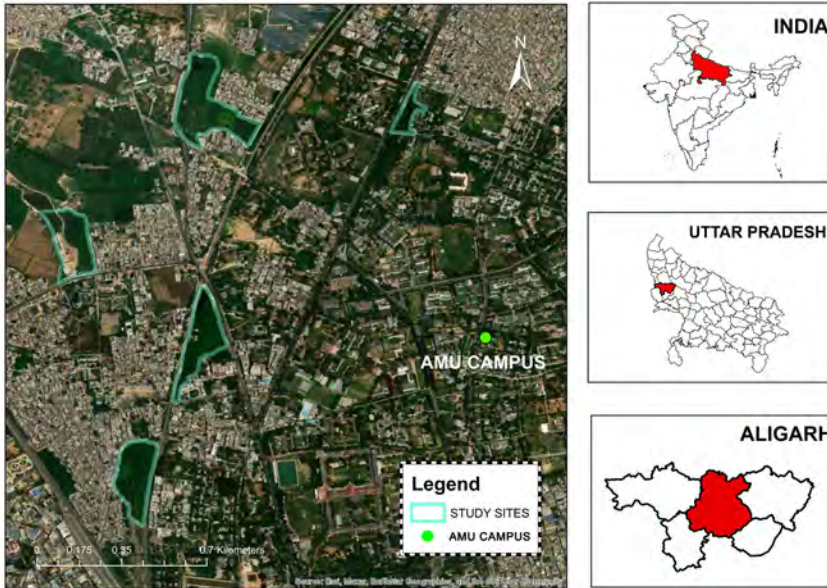
A total of five sites were selected where the waterlogged conditions remain



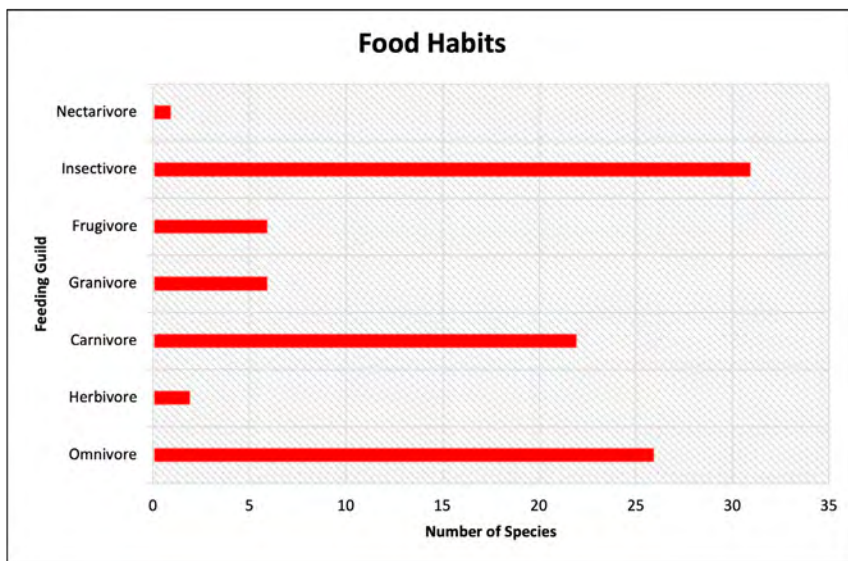
An overhead tank being constructed at the study site. © Mirza Altaf Baig.

throughout the year. They collectively account for an area of 41.66 acres. Floral species around the selected sites include *Azadirachta indica*,

*Mangifera indica*, *Psidium guajava*, *Ficus benghalensis*, *Ficus religiosa*, *Eucalyptus* spp., *Melia azedarach*, *Ceiba pentandra*, *Delonix*



Location of the study sites.



Number of observed avian species in different feeding guilds.

*regia*, *Prosopis juliflora*, and *Pontederia crassipes*.

The study was carried out for one year, from June 2019 to June 2020. The birds were observed during the most active period of the day, i.e., 0600–1000 h and 1600–1800

h (Bibby et al. 1998). The birds were identified and classified based on the standard field guide and checklist of species was prepared following Grimmett et al. (2011). The birds were listed using the direct count methods, walking around the waterlogged areas

and listing the bird species. Opportunistic observations were also recorded. A pair of binoculars (Olympus 8 x 40) was used to record the observations from a distance to avoid any disturbance. During the field visits, photos were captured using Canon SX60 HS and Canon SX430 IS point and shoot cameras.

A total of 94 species of birds belonging to 19 orders and 43 families were observed. Passeriformes was the most dominant order (40 species). The list was categorized as per the migratory status, feeding habits, IUCN Red List, Wildlife (Protection) Act, 1972 and the population trend. An analysis of data revealed that a majority of the species were residents (75.53%) followed by winter visitors (20.21%), summer visitors (3.19%), and passage migrants (1.06%). Further analysis based on the IUCN Red List status revealed that the Least Concern category includes the majority of species (89), followed by Near Threatened (03) including the Painted Stork, Black-headed Ibis, and Alexandrine Parakeet; one Vulnerable, i.e., the Common Pochard and one

Table: Checklist of bird species recorded from the selected waterlogged areas around AMU campus, Aligarh district, Uttar Pradesh, India.

Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend
1	Galliformes	Indian Peafowl	<i>Pavo cristatus</i>	R	O	LC	Sch. I	Stable
2	Anseriformes	Lesser Whistling-Duck	<i>Dendrocygna javanica</i>	R	O	LC	Sch. IV	Decreasing
3		Gadwall	<i>Mareca strepera</i>	WV	H	LC	Sch. IV	Increasing
4		Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	R	H	LC	Sch. IV	Decreasing
5	Podicipediformes	Northern Shoveler	<i>Spatula clypeata</i>	WV	O	LC	Sch. IV	Decreasing
6		Common Pochard	<i>Aythya ferina</i>	WV	O	VU	Sch. IV	Decreasing
7		Little Grebe	<i>Tachybaptus ruficollis</i>	R	C	LC	Sch. IV	Decreasing
8	Ciconiiformes	Painted Stork	<i>Mycteria leucocephala</i>	R	C	NT	Sch. IV	Decreasing
9	Threskiornithidae	Black-headed Ibis	<i>Threskiornis melanoleuca</i>	R	C	NT	Sch. IV	Decreasing
10		Red-naped Ibis	<i>Pseudibis papillosa</i>	WV	C	LC	Sch. IV	Decreasing
11		Glossy Ibis	<i>Plegadis falcinellus</i>	WV	C	LC	Sch. IV	Decreasing
12		Indian Pond-Heron	<i>Ardeola grayii</i>	R	C	LC	Sch. IV	Unknown
13		Purple Heron	<i>Ardea purpurea</i>	R	C	LC	Sch. IV	Decreasing
14	Ardeidae	Cattle Egret	<i>Bubulcus ibis</i>	R	C	LC	Sch. IV	Increasing
15		Great White Egret	<i>Ardea alba</i>	R	C	LC	Sch. IV	Unknown
16		Little Egret	<i>Egretta garzetta</i>	R	C	LC	Sch. IV	Increasing
17		Suliformes	Little Cormorant	<i>Microcarbo niger</i>	R	C	LC	Sch. IV
18	Accipitriformes	Black-winged Kite	<i>Elanus caeruleus</i>	R	C	LC	Sch. I	Stable
19		Black Kite	<i>Milvus migrans</i>	R	C	LC	Sch. I	Stable
20		Egyptian Vulture	<i>Neophron percnopterus</i>	R	C	EN	Sch. IV	Decreasing
21	Gruiformes	Shikra	<i>Accipiter badius</i>	R	C	LC	Sch. I	Stable
22		White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	R	O	LC	Sch. IV	Unknown
23		Purple Swampphen	<i>Porphyrio porphyrio</i>	R	O	LC	Sch. IV	Unknown
24		Common Moorhen	<i>Gallinula chloropus</i>	R	O	LC	Sch. IV	Stable
25		Common Coot	<i>Fulica atra</i>	R	O	LC	Sch. IV	Increasing
26	Charadriiformes	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	R	O	LC	Sch. IV	Decreasing
27		Bronze-winged Jacana	<i>Metopidius indicus</i>	R	O	LC	Sch. IV	Unknown

	Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend	
28	Charadriiformes	Recurvirostridae	Black-winged Stilt	<i>Himantopus himantopus</i>	WV	C	LC	Sch. IV	Increasing	
29		Charadriidae	Red-wattled Lapwing	<i>Vanelus indicus</i>	R	C	LC	Sch. IV	Unknown	
30		Rostratulidae	Greater Painted-Snipe	<i>Rostratula benghalensis</i>	R	O	LC	Sch. IV	Decreasing	
31	Scolopacidae		Common Redshank	<i>Tringa totanus</i>	WV	C	LC	Sch. IV	Unknown	
32			Green Sandpiper	<i>Tringa ochropus</i>	WV	C	LC	Sch. IV	Increasing	
33			Wood Sandpiper	<i>Tringa glareola</i>	WV	C	LC	LC	Sch. IV	Stable
34			Rock Dove	<i>Columba livia</i>	R	G	LC	LC	Sch. IV	Decreasing
35			Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	R	G	LC	LC	Sch. IV	Increasing
36	Columbiformes	Columbidae	Red Turtle-Dove	<i>Streptopelia tranquebarica</i>	R	G	LC	Sch. IV	Decreasing	
37			Laughing Dove	<i>Spilopelia senegalensis</i>	R	O	LC	LC	Sch. IV	Stable
38			Yellow-footed Green-Pigeon	<i>Treron phoenicopterus</i>	R	F	LC	LC	Sch. IV	Increasing
39	Psittaciformes	Psittacidae	Alexandrine Parakeet	<i>Palaeornis eupatria</i>	R	F	NT	Sch. IV	Decreasing	
40			Rose-ringed Parakeet	<i>Alexandrinus krameri</i>	R	F	LC	LC	Sch. IV	Increasing
41	Cuculiformes		Jacobin Cuckoo	<i>Clamator jacobinus</i>	SV	I	LC	Sch. IV	Stable	
42			Common Hawk-Cuckoo	<i>Hierococcyx varius</i>	R	I	LC	LC	Sch. IV	Stable
43			Western Koel	<i>Eudynamis scolopacea</i>	R	O	LC	LC	Sch. IV	Stable
44			Greater Coucal	<i>Centropus sinensis</i>	R	O	LC	LC	Sch. IV	Stable
45			Spotted Owllet	<i>Athene brama</i>	R	I	LC	LC	Sch. IV	Stable
46	Caprimulgiformes	Apodidae	Little Swift	<i>Apus affinis</i>	R	I	LC		Increasing	
47	Bucerotiformes	Upupidae	Common Hoopoe	<i>Upupa epops</i>	R	I	LC	Sch. IV	Decreasing	
48	Coraciiformes	Coraciidae	Indian Roller	<i>Coracias benghalensis</i>	R	I	LC	Sch. IV	Increasing	
49		Alcedinidae	White-breasted Kingfisher	<i>Halcyon smyrnensis</i>	R	C	LC	Sch. IV	Increasing	
50		Meropidae	Asian Green Bee-eater	<i>Merops orientalis</i>	R	I	LC	LC	Increasing	
51	Bucerotiformes	Bucerotidae	Indian Grey Hornbill	<i>Ocyrocus birostris</i>	R	O	LC	Sch. I	Stable	
52	Piciformes	Megalaimidae	Brown-headed Barbet	<i>Psilopogon zeylanicus</i>	R	F	LC	Sch. IV	Stable	
53			Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	R	F	LC	LC	Sch. IV	Increasing
54			Black-rumped Flameback	<i>Dinopium benghalense</i>	R	I	LC	LC	Sch. IV	Stable
55	Passeriformes	Laniidae	Long-tailed Shrike	<i>Lanius schach</i>	R	C	LC	Sch. IV	Unknown	
56		Dicruridae	Black Drongo	<i>Dicrurus macrocercus</i>	R	I	LC	Sch. IV	Unknown	

	Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend
57	Passeriformes	Oriolidae	Indian Golden Oriole	<i>Oriolus kundoo</i>	SV	F	LC	Sch. IV	Unknown
58			Rufous Treepie	<i>Dendrocitta vagabunda</i>	R	O	LC	Sch. IV	Decreasing
59		Corvidae	Large-billed Crow	<i>Corvus macrorhynchos</i>	R	O	LC	Sch. IV	Stable
60			House Crow	<i>Corvus splendens</i>	R	O	LC	Sch. V	Stable
61		Hirundinidae	Wire-tailed Swallow	<i>Hirundo smithii</i>	SV	I	LC		Increasing
62		Pycnonotidae	Red-vented Bulbul	<i>Pycnonotus cafer</i>	R	O	LC	Sch. IV	Increasing
63			Ashy Prinia	<i>Prinia socialis</i>	R	I	LC	Sch. IV	Stable
64			Plain Prinia	<i>Prinia inornata</i>	R	I	LC	Sch. IV	Stable
65		Cisticolidae	Zitting Cisticola	<i>Cisticola juncidis</i>	R	I	LC		Increasing
66			Common Tailorbird	<i>Orthotomus sutorius</i>	R	I	LC	Sch. IV	Stable
67		Phylloscopidae	Common Chiffchaff	<i>Phylloscopus collybita</i>	WV	I	LC	Sch. IV	Increasing
68			Greenish Warbler	<i>Phylloscopus trochiloides</i>	PM	I	LC	Sch. IV	Increasing
69		Sylviidae	Lesser Whitethroat	<i>Curruca curruca</i>	WV	I	LC	Sch. IV	Stable
70			Large Grey Babbler	<i>Argya malcolmi</i>	R	I	LC	Sch. IV	Stable
71		Leiotrichidae	Jungle Babbler	<i>Argya striata</i>	R	I	LC	Sch. IV	Stable
72		Zosteropidae	Indian White-eye	<i>Zosterops palpebrosus</i>	R	O	LC	Sch. IV	Decreasing
73			Bank Myna	<i>Acridotheres ginginianus</i>	R	O	LC	Sch. IV	Increasing
74			Common Myna	<i>Acridotheres tristis</i>	R	O	LC	Sch. IV	Increasing
75		Sturnidae	Asian Pied Starling	<i>Gracupica contra</i>	R	O	LC	Sch. IV	Increasing
76			Brahminy Starling	<i>Sturnia pagodarum</i>	R	O	LC	Sch. IV	Unknown
77			Common Starling	<i>Sturnus vulgaris</i>	WV	O	LC	Sch. IV	Decreasing
78			Bluethroat	<i>Cyanecula svecica</i>	WV	I	LC	Sch. IV	Stable
79			Oriental Magpie-Robin	<i>Copsychus saularis</i>	R	I	LC	Sch. IV	Stable
80		Muscicapidae	Indian Robin	<i>Saxicoloides fulicatus</i>	R	I	LC	Sch. IV	Stable
81			Black Redstart	<i>Phoenicurus ochruros</i>	WV	I	LC	Sch. IV	Increasing
82			Brown Rockchat	<i>Oenanthe fusca</i>	WV	I	LC	Sch. IV	Stable
83			Red-breasted Flycatcher	<i>Ficedula parva</i>	R	I	LC	Sch. IV	Increasing
84		Nectariniidae	Purple Sunbird	<i>Cinnyris asiaticus</i>	R	N	LC	Sch. IV	Stable
85		Passeridae	House Sparrow	<i>Passer domesticus</i>	R	O	LC	Sch. IV	Decreasing

	Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend
86	Passeriformes	Passeridae	Chestnut-shouldered Bush-sparrow	<i>Gymnoris xanthocephalis</i>	R	G	LC	Sch. IV	Stable
87		Estrildidae	Indian Silverbill	<i>Euodice malabarica</i>	R	G	LC	Sch. IV	Stable
88			Scaly-breasted Munia	<i>Lonchura punctulata</i>	R	G	LC	Sch. IV	Stable
89		Motacillidae	Western Yellow Wagtail	<i>Motacilla flava</i>	WV	I	LC	Sch. IV	Decreasing
90			Citrine Wagtail	<i>Motacilla citreola</i>	WV	I	LC	Sch. IV	Increasing
91			Grey Wagtail	<i>Motacilla cinerea</i>	WV	I	LC	Sch. IV	Stable
92			White Wagtail	<i>Motacilla alba</i>	WV	I	LC	Sch. IV	Stable
93		Paddyfield Pipit	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	R	I	LC	Sch. IV	Stable
94			Paddyfield Pipit	<i>Anthus rufulus</i>	R	I	LC	Sch. IV	Stable

Status: R—Resident | WV—Winter Visitor | SV—Summer Visitor | PM—Passage Migrant.  
 Feeding Guild: O—Omnivore | H—Herbivore | C—Carnivore | G—Granivore | F—Frugivore | I—Insectivore | N—Nectarivore.  
 IUCN Status: LC—Least Concern | VU—Vulnerable | NT—Near Threatened | EN—Endangered.  
 WPA, 1972 (Wild Life (Protection) Act, 1972): Sch.—Schedule.

Endangered, i.e., the Egyptian Vulture.

A classification of the observed species based on population trend revealed that the population of a majority of species is stable (35), followed by increasing (25) and decreasing (22) trends. The population trend of 12 species is unknown (IUCN 2022).

The areas investigated in this study encompass of water hyacinth along with some other aquatic plants as well as shallow open-water areas devoid of aquatic vegetation. The water hyacinth and aquatic plants serve as hiding cover for avian species while open water areas as the foraging grounds. The shallow water is rich in food resources, such as fishes, amphibians, insects and aquatic plants that are the major diet of avian species especially waterfowl, cormorants, grebes, sandpipers, stilts, and egrets.

Unfortunately, these fragile areas have been shrinking at an alarming rate due to urban development. An overhead tank is under construction at one of the study sites where Painted Stork, Common Redshank, and Wood Sandpiper were the regular visitors. Moreover, people living close to these sites use them for washing clothes as well as for dumping garbage. Therefore, there is a considerable need to conduct detailed studies pertaining to various aspects of the avian ecology at these waterlogged areas.

Photos of bird species captured from the selected waterlogged areas around AMU campus, Aligarh district, Uttar Pradesh, India



Asian Pied Starling.



Bank Myna.



Black Drongo.



Black Kite.



Black-winged Stilt.



Bluethroat.



Brahminy Starling.



Bronze-winged Jacana.



Brown Rockchat.



Brown-headed Barbet.



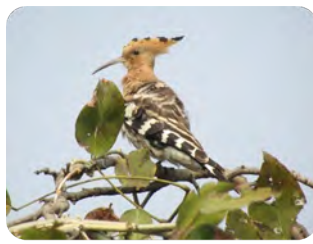
Cattle Egret.



Citrine Wagtail.



Common Coot.



Common Hoopoe.



Common Moorhen.



Common Pochard.



Common Redshank.



Common Starling.



Common Tailorbird.



Egyptian Vulture.



Gadwall.



Great White Egret.



Greater Painted-Snipe.



Green Sandpiper.



Indian Pond-Heron.



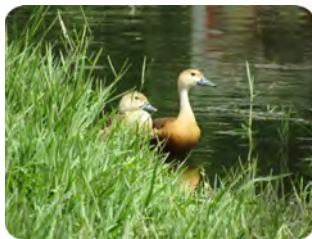
Indian Roller.



Indian Spot-billed Duck.



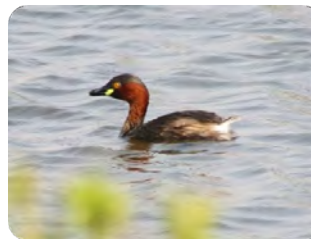
Laughing Dove.



Lesser Whistling-Duck.



Little Cormorant.



Little Grebe.



Northern Shoveler.



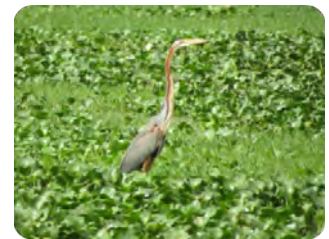
Paddyfield Pipit.



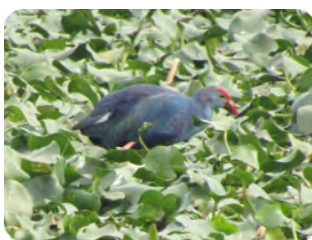
Painted Stork.



Plain Prinia.



Purple Heron.



Purple Swamphen.



Red-wattled Lapwing.



Rock Dove.



Western Koel.



Western Yellow Wagtail.



White Wagtail.



White-breasted Kingfisher.



White-breasted Waterhen.



White-browed Wagtail.



Wire-tailed Swallow.



Wood Sandpiper.



Yellow-footed Green Pigeon.



Zitting Cisticola.

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