

# Exploring the Avian Diversity and Conservation Status in the Vicinity of SAM Global University

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Selection and peer review of this article are under the responsibility of the scientific committee of the International Conference on Current Trends in Engineering, Science, and Management (ICCSTEM-2024) at SAM Global University, Bhopal.

**Abstract** - Birds, as a diverse group of vertebrates, exhibit remarkable adaptations to various habitats, with wetlands particularly fostering substantial biodiversity. The SAM Global University of Madhya Pradesh in central India is a crucial hub for biodiversity conservation, boasting diverse avifauna. This study aims to comprehensively document the avian diversity within the university campus, highlighting the significant biodiversity in the surrounding areas. Regular monitoring becomes imperative given the escalating population pressure and consequent land use changes in the immediate vicinity, impacting adjacent forest ecosystems. This study was conducted from August 2022 to February 2024 and involved monthly bird observations to catalogue species inhabiting the nearest forest areas and water bodies. Over 50 bird species spanning over 10 families were recorded, with one dominant family comprising 10 species. Among these, 20 species were migratory, while 15 were resident. The area serves as a year-round habitat for various bird species, including migratory, local migratory, and resident birds. However, the burgeoning human population threatens this freshwater ecosystem and its associated avian life, necessitating intensified conservation efforts.

**Keywords:-** IUCN, BIRDS, Habitat, Avifauna, Migration

## 1. INTRODUCTION

Biodiversity encompasses the vast array of plant, animal, and microorganism species and the ecosystems in which they coexist and thrive. Conservation efforts are dedicated to safeguarding the diverse species inhabiting our planet and the ecosystems that sustain their existence and development. Birds, a highly diverse group of vertebrates, exhibit remarkable adaptations to various habitats. Their evolutionary trajectory, characterized by the development of flight after diverging from theropod dinosaurs, spans approximately 100

million years, resulting in their current abundance. Bhopal City is recognized as a crucial habitat for resident and migratory water bird species, and it has earned distinction as a Ramsar site and an Important Bird Area (IBA) due to its significant and thriving water bird population year-round. The area hosts a diverse array of water birds, including cormorants, egrets, herons, storks, ibises, cranes, ducks, jacanas, lapwings, stilts, sandpipers, gulls, terns, and kingfishers. The entire SGU campus is encompassed by a vast, dense forest area meticulously managed by the Forest Department

of Madhya Pradesh. Historically, this area served as a healthy and rich habitat for wildlife, including avian species, amphibians, reptiles, and other fauna. The campus boasts diverse wetland habitats, which serve as essential ecosystems supporting numerous bird species, many of which are migratory, visiting the subcontinent from their breeding grounds. The richness of avian species observed within the campus is largely attributed to the abundance of food sources, which attract a plethora of avifauna to establish their habitats here.

## 2. METHODOLOGY

The survey was conducted from August 2022 to February 2024 to assess the present status and compile a list of avian and water bird species within the study area. Visual surveys were conducted, wherein designated survey areas were extensively traversed while visually scanning for bird species using torch lights during both morning and evening hours. Reptile surveys primarily occurred during daytime hours, with snake surveys also conducted in response to rescue calls. Active searches involved thorough exploration of dense forest areas, supplemented by occasional observations of walls and windows of buildings. During daylight hours, in addition to active searches, basking reptiles were recorded along forest edges and stream sides. Incidences of road kills were also documented throughout the study period. Species identification relied on morphological characteristics, supported by colour photographs captured with a Sony Nikon DSLR camera. Geographic coordinates for survey sites were recorded using GPS devices from Chart Cross Ltd and Polaris GPS. Encountered specimens were meticulously observed, photographed, and identified utilizing relevant

literature and field guides (Smith, 1935; 1943; Whitaker and Captain, 2004).

## 3. RESULT AND DISCUSSION

The investigation into avian diversity and conservation within the vicinity of Sam Global University yields significant insights into the ecological importance of bird populations in the area and proposes measures for their protection. The area surrounding Sam Global University hosts a diverse array of bird species, each exhibiting unique behaviours and habitat preferences. Prominent among these species are the Indian Peafowl, Indian Roller, Common Myna, and Oriental Magpie Robin, frequently observed in open habitats such as parks, gardens, and agricultural fields. Human activities exert a considerable influence on bird diversity and conservation within and around Sam Global University. Urbanization and agricultural practices have led to the fragmentation and degradation of bird habitats, while activities such as hunting and poaching have contributed to declining bird populations. Insufficient public awareness and education regarding bird conservation further exacerbate these challenges. Addressing these issues necessitates the implementation of effective conservation policies and laws aimed at safeguarding bird habitats and regulating human activities. Public awareness and educational initiatives can promote bird conservation and foster sustainable development practices, including eco-tourism and bird-watching activities. Collaborative efforts are essential to protect the rich diversity of bird species within and surrounding Sam Global University, ensuring their persistence for future generations to appreciate and enjoy.

S.No	Family	Scientific Name	Common Name
1	Podicipitidae	Tachybaptus ruficollis	Little Grebe
2	Podicipitidae	Phalacrocorax carbo	Great Cormorant
3	Podicipitidae	Phalacrocorax fuscicollis	Indian Shag
4	Podicipitidae	Phalacrocorax niger	Little Cormorant
5	Podicipitidae	Anhinga melanogaster	Darter
6	Ardeidae	Casmerodius albus	Large Egret
7	Ardeidae	Egretta garzetta	Little Egret
8	Ardeidae	Mesophoyx intermedia	Median Egret
9	Ardeidae	Bubulcus ibis	Cattle Egret
10	Ardeidae	Ardea cinerea	Grey Heron
11	Ardeidae	Ardea purpurea	Purple Heron
12	Ardeidae	Butorides striatus	Little Green Heron
13	Ardeidae	Nycticorax nycticorax	Black-crowned Night-Heron
14	Ardeidae	Ardeola grayii	Indian Pond-Heron
15	Ardeidae	Ixobrychus cinnamomeus	Chestnut Bittern
16	Ciconiidae	Mycteria leucocephala	Painted Stork
17	Ciconiidae	Anastomus oscitans	Asian Openbill-Stork
18	Ciconiidae	Ciconia episcopus	White-Necked Stork
19	Ciconiidae	Ciconia ciconia	European White Stork
20	Ciconiidae	Ciconia nigra	Black Stork
21	Ciconiidae	Ephippiorhynchus asiaticus	Black-Necked Stork
22	Ciconiidae	Threskiornis melanocephalus	Oriental White Ibis
23	Ciconiidae	Pseudibis papillosa	Black Ibis
24	Ciconiidae	Plegadis falcinellus	Glossy Ibis
25	Ciconiidae	Platalea leucorodia	Eurasian Spoonbill
26	Anatidae	Anser indicus	Bar-headed Goose
27	Anatidae	Tadorna ferruginea	Brahminy Shelduck
28	Anatidae	Sarkidiornis melanotos	Comb Duck
29	Anatidae	Dendrocygna javanica	Lesser Whistling-Duck
30	Anatidae	Anas acuta	Northern Pintail
31	Anatidae	Anas crecca	Common Teal
32	Anatidae	Anas poecilorhyncha	Spot-billed Duck
33	Anatidae	Anas platyrhynchos	Mallard
34	Anatidae	Anas strepera	Gadwall
35	Anatidae	Anas clypeata	Northern Shoveller
36	Anatidae	Anas querquedula	Garganey
37	Anatidae	Rhodonessa rufina	Red-crested Pochard
38	Anatidae	Aythya ferina	Common Pochard
39	Anatidae	Aythya nyroca	Ferruginous Pochard
40	Anatidae	Nettapus coromandelianus	Cotton Teal

41	Anatidae	Spilopelia chinensis	Spotted Dove
42	Rallidae	Amaurornis phoenicurus	White-breasted Waterhen
43	Rallidae	Gallinula chloropus	Common Moorhen
44	Rallidae	Porphyrio porphyrio	Purple Moorhen
45	Rallidae	Fulica atra	Common Coot
46	Dicruridae	Dicrurus macrocercus	Black Drango
47	Dicruridae	Hydrophasianus chirurgus	Pheasant-tailed Jacana
48	Charadriidae	Vanellus indicus	Red-wattled Lapwing
49	Charadriidae	Charadrius dubius	Little Ringed Plover
50	Charadriidae	Tringa totanus	Common Redshank
51	Charadriidae	Tringa nebularia	Common Greenshank
52	Charadriidae	Actitis hypoleucos	Common Sandpiper
53	Charadriidae	Tringa stagnatilis	Marsh Sandpiper
54	Charadriidae	Tringa glareola	Wood Sandpiper
55	Charadriidae	Rostratula benghalensis	Greater Painted-Snipe
56	Timaliidae	Turdoides malcolmi	Large Grey Babbler
57	Phasianidae	Pavo cristatus	Indian Peafowl

### 3. CONCLUSIONS

This study revealed the presence of more than 60 species of Birds. Some birds are migratory or seasonable and are present only in a specific period, like winter. Sam Global University is a diverse ecosystem that supports a variety of bird species, making it an ideal location for studying avian diversity and conservation. This research explored species' diversity and conservation status in and around Sam Global University. We will analyze the different bird species in the area, their ecological roles, and their conservation status. We also discuss the factors that affect bird diversity and conservation and the strategies and measures needed to protect them. The diversity of bird species in and around Sam Global University is home to a rich diversity of bird species, ranging from small songbirds to large raptors. Some of the common bird species found in the area include the Indian peafowl, red-vented bulbul, common myna, and the black kite. These birds have adapted to the local environment, with some species preferring open

grasslands while others thrive in forested areas. The area's distribution and abundance of bird species vary depending on the season. For instance, during the monsoon season, migratory birds such as the Siberian crane and the northern pintail arrive in the area to breed. However, during the summer, the number of bird species decreases due to the harsh weather conditions. The diversity of bird species in the area plays a crucial role in maintaining the ecosystem's balance by pollinating plants, controlling pests, and dispersing seeds.

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