



## Avian faunal diversity of Malwa Plateau.

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**ABSTRACT:** Globalization leading cause of habitat destruction, overexploitation, pollution, exotic species introduction, and biodiversity loss of avifauna. The erosion of biodiversity is mainly due to habitat loss caused by the expansion of several globalization goals. The Ujjain city was a significant cultural, economic center of the ancient period. The lifeline of this city is the Shipra River. Choti Kali Sindh, Gambhir, and Parwati are other rivers of this region. This region's climate is very pleasant with calm morning winds, Karaman, and an evening breeze, shabe-e-Malwa. Summer, winter, and rain represent the seasonal diversity of this region. Above geographical and climatic diversity welcomes to avifauna. 103 birds' species were belonging to different families, namely Podicipedidae, Pelecanidae, Sulidae, Phalacrocoracidae, Anhingidae, Fregatidae, Ardeidae, Ciconiidae, Threskiornithidae, Anatidae, Accipitridae, Phasianidae, Rallidae, Jacanidae, Rostratulidae, Haematopodidae, Scolopacidae, Recurvirostridae, Glareolidae, Laridae, Psittacidae, Cuculidae, Tytonidae, Strigidae, Caprimulgidae, Alcedinidae, Meropidae, Apodidae, Bucerotidae, Picidae, Turdinae. Birds of these different families depend upon local flora and fauna and the nearby agrobiodiversity for their food. Anthropogenic activities around the study sideshow a negative impact on the schooling of avifauna. Some migratory birds inhabited the wetlands and forest areas for the winter months.

**KEYWORDS:** Globalization, Avifauna, Malwa Plateau, Biodiversity.

### I. INTRODUCTION

Avifauna is a topic of interest from the very binging of life. In India, some behavioral aspects of avifauna are also depicted in folk songs and stories. Bulbul, Tota, Mayna, Kabutar, Chidiya, Cauva, Mor, Hans, and Garud are common birds of the literature. The impact of anthropological activities on global biodiversity is a current topic of numerous studies. Globalization has a negative impact on avian habitat. Human association with biodiversity show negative, positive, and negative quadratic relationship. These association patterns can be hypothesized in 3 categories- 1-Area high biodiversity with a high human population (Due to productivity), 2- Area of decrease biodiversity with an increasing human population (Due to ecosystem stress), 3- Area of peak biodiversity with an intermediate level of human influence (Due to intermediate disturbance).

The positive correlation (i.e., of the category of hypothesis) is due to increased productivity gradients through anthropogenic activities; productive landscapes attract both human and other species of biodiversity, as found in Africa, Europe, and North America [1], [2] and [3]. According to the second hypothesis, humans are detrimental to biodiversity because they remove habitat and necessary biodiversity resources [4], [5], and [6]. Biodiversity is a central part of our daily lives and livelihood. Resources upon which families, communities, nations, and future generations also depend a part of biodiversity. The decline of biodiversity has severe economic and social costs for any country on this planet—industrialization and economic development altering and destroying ecosystems rapidly. India is one of twelve megadiversity countries of the globe. The Value of biodiversity is challenging to estimate; it can be classified into direct and indirect values. Direct Value is a kind of consumptive Value in agriculture and medicine. About 10 to 20 species provide a large percentage of food requirements of the globe, and indirect values are related to the ecological process. It is estimated that, after Independence, the country has lost 4,696 million hectares of forestland to non-forestry purposes.

While 0.07 million ha of forest land has been illegally encroached upon, 4.37 million ha has been subjected to cultivation, 0.52 million ha given to river valley projects, 0.14 million ha to industries and townships, 0.06 million ha for transmission lines and roads; and the rest for various purposes [7]. Habitat loss leads to the fragmentation of continuous land and fragments of wildlife populations inhabiting units—these cause inbreeding depression, infant mortality, and susceptibility to environmental stochasticity. Globalization is

also related to numerous other problems contributing to the loss of several faunal and floral species. Anthropogenic activities and pressure affect the aquatic habitat and avifauna [8] and [9]. Grazing grounds are generally reduced by globalization. Birds are especially more responsive to livestock grazing; therefore, avian diversity is also destroyed by globalization [10].

Lakes, ponds, wetlands, seasonal ponds, and marshes are the best breeding, feeding, and shelter places of migratory and resident birds, but due to globalization, these habitats are continually reducing because of the constant spread of industries and modernization. Mining of plan, mountains, and banks of water bodies for stones and gravels and changing agricultural patterns are primary causes of water bodies' decline. Such conditions are evident in Uttar Pradesh from sugarcane and in Madhypradesh from soyabean crop. In these two states, large waterbodies and water birds are declined [11]. Several studies have been shown the effects of radiation on avifauna [12], [13], and [14]. The mortality rate of the radiation colony of birds was double that control group. Malwa is an essential part of west-central northern India. It is a volcanic Plateu in the western part of Madhya Pradesh. The average elevation of this plateau is 500 meters. This plateau covers western M.P. and southeast Rajasthan (21°10'N 73°45'E and 25.167°N 79.233°E ) and in the west some part of Gujrat. In southeast Vindhya Range in the north, it occupies Bundelkhand upland. Malwa plateau is an extension of the Deccan Traps of the cretaceous period. Most of the central part of this plateau is drained by Chambal, Betwa, Dhasn, Ken, and their main tributaries, and the Mahi River drains the western part of this plateau. This plateau is also famous for opium cultivation in the world scenario. Cotton, wheat, and soybean are commercial crops of this region. In present status, it includes Ujjain, Dewas, Shajapur, Ratlam, Sehore and Guna, Jhalawar, Banswara, and Chittor districts of Madhya Pradesh and Rajasthan. This plateau has also covered some parts of the Nimar of Vindhyas range. Due to its volcanic origin, its soil is fertile, and therefore, this region is rich in flora and fauna. It is a region of tropical climate with deciduous forests that act as a home of birds. Mandu, Indore, Ujjain, and Maheshwar cities have many ecotourism places for bird watching.

## II. METHODOLOGY

The study was carried out at Ujjain Ghambhir Dam, Undasa Talab, Eidgah Talab, Kalida palace, Vikram Park, Vikram Nagar, and Panvihar, Mahakaleshwar, Pinglashwar from January - 2009 to December - 2011. Monthly observations were done at don and dust timing (5.00 – 9.00 am and 5- 7 pm). Except for this, some observations were also noticed in the sandwich timing of the above schedule in the winter session. The natural flora of the study area provides natural habitat to several local faunas. The study area uses the land for agriculture (corn, wheat, soybean, mung, udad and tuar, vegetables). Nocturnal species were not observed.

## III. OBSERVATION

The study area's landscape and greenery are suitable for avifauna, but the anthropogenic pressure of avifauna was less. Ghambhir, Undasa Talab, and Eidgah Talab wetlands are right places of aquatic avifauna. Cormorants, Openbill stroke, Terun, Pied kingfisher are very common in evening hrs. 103 birds' species were belonging to different families, namely Podicipedidae, Pelecanidae, Sulidae, Phalacrocoracidae, Anhingidae, Fregatidae, Ardeidae, Ciconiidae, Threskiornithidae, Anatidae, Accipitridae, Phasianidae, Rallidae, Jacanidae, Rostratulidae, Haematopodidae, Scolopacidae, Recurvirostridae, Glareolidae, Laridae, Psittacidae, Cuculidae, Tytonidae, Strigidae, Caprimulgidae, Alcedinidae, Meropidae, Apodidae, Bucerotidae, Picidae, Turdinae (Table -2)

S.N.	Name of Bird	Scientific Name
1.	LITTLE GREBE	<i>Tachybaptus ruficollis</i>
2.	GREAT WHITE PELICAN	<i>Pelecanus onocrotalus</i>
3.	LITTLE CORMORANT	<i>Phalacrocorax niger</i>
4.	INDIAN SHAG	<i>P. fuscicollis</i>
5.	GREAT CORMORANT	<i>P. carbo</i>
6.	DARTER	<i>Anhinga melanogaster</i>
7.	LITTLE EGRET	<i>Egretta garzetta</i>
8.	GREY HERON	<i>Ardea cinerea</i>
9.	LARGE EGRET	<i>Casmerodius albus</i>
10.	MEDIAN EGRET	<i>Mesophoyx intermedia</i>
11.	CATTLE EGRET	<i>Bubulcus ibis</i>
12.	INDIAN POND-HERON	<i>Ardeola grayii</i>

13.	BLACK-CROWNED NIGHT-HERON	<i>Nycticorax nycticorax</i>
14.	LITTLE BITTERN	<i>Ixobrychus minutus</i>
15.	PAINTED STORK	<i>Mycteria leucocephala</i>
16.	BLACK STORK	<i>Ciconia nigra</i>
17.	WHITE-NECKED STORK	<i>Ciconia episcopus</i>
18.	GLOSSY IBIS	<i>Plegadis falcinellus</i>
19.	WHITE IBIS	<i>Threskiornis melanocephalus</i>
20.	EURASIAN SPOONBILL	<i>Platalea leucorodia</i>
21.	GREYLAG GOOSE	<i>Anser anser</i>
22.	BAR-HEADED GOOSE	<i>A. indicus</i>
23.	BRAHMINY SHELDUCK	<i>Tadorna ferruginea</i>
24.	GADWALL	<i>Anas strepera</i>
25.	BRAHMINY SHELDUCK	<i>Tadorna ferruginea</i>
26.	MALLARD	<i>A. platyrhynchos</i>
27.	NORTHERN SHOVELER	<i>A. clypeata</i>
28.	NORTHERN PINTAIL	<i>A. acuta</i>
29.	GARGANEY	<i>A. querquedula</i>
30.	COMMON TEAL	<i>A. crecca</i>
31.	BLACK-SHOULDERED KITE	<i>Elanus caeruleus</i>
32.	ORIENTAL HONEY-BUZZARD	<i>Pernis ptilorhynchus</i>
33.	COMMON POCHARD	<i>Aythya ferina</i>
34.	COMMON KESTREL	<i>Falco tinnunculus</i>
35.	LAGGAR FALCON	<i>F. jugger</i>
36.	JUNGLE BUSH QUAIL	<i>Perdica asiatica</i>
37.	COMMON REDSHANK	<i>Tringa totanus</i>
38.	WHITE-TAILED LAPWING	<i>V. leucurus</i>
39.	RED-WATTLED LAPWING	<i>Vanellus indicus</i>
40.	LITTLE RINGED PLOVER	<i>Charadrius dubius</i>
41.	COMMON COOT	<i>Fulica atra</i>
42.	COMMON MOORHEN	<i>Gallinula chloropus</i>
43.	WHITE-BREASTED WATERHEN	<i>Amauornis phoenicurus</i>
44.	INDIAN PEAFOWL	<i>Pavo cristatus</i>
45.	WHISKERED TERN	<i>Chlidonias hybridus</i>
46.	STONE-CURLEW	<i>Burhinus oedicnemus</i>
47.	EURASIAN COLLARED-DOVE	<i>S. decaocto</i>
48.	YELLOW-LEGGED GREEN-PIGEON	<i>Treron phoenicoptera</i>
49.	PIED CRESTED CUCKOO	<i>Clamator jacobinus</i>
50.	COMMON CUCKOO	<i>Cuculus canorus</i>
51.	INDIAN JUNGLE NIGHTJAR	<i>Caprimulgus indicus</i>
52.	GREATER COUCAL	<i>Centropus sinensis</i>
53.	COLLARED SCOPS-OWL	<i>Otus bakkamoena</i>
54.	HOUSE SWIFT	<i>Apus affinis</i>
55.	ASIAN KOEL	<i>Eudynamis scolopacea</i>
56.	WHITE-BREASTED KINGFISHER	<i>Halcyon smymensis</i>
57.	LESSER PIED KINGFISHER	<i>Ceryle rudis</i>
58.	SMALL BEE-EATER	<i>Merops orientalis</i>

59.	BLUE-TAILED BEE-EATER	<i>M. philippinus</i>
60.	INDIAN ROLLER	<i>Coracias benghalensis</i>
61.	COMMON HOOPOE	<i>Upupa epops</i>
62.	EURASIAN WRYNECK	<i>Jynx torquilla</i>
63.	RED-WINGED BUSH-LARK	<i>Mirafra erythroptera</i>
64.	GREATER SHORT-TOED LARK	<i>Calandrella brachydactyla</i>
65.	WIRE-TAILED SWALLOW	<i>Hirundo smithii</i>
66.	EURASIAN TREE PIPIT	<i>Anthus trivialis</i>
67.	GREY WAGTAIL	<i>M. cinerea</i>
68.	COMMON WOODSHRIKE	<i>Tephrodornis pondicerianus</i>
69.	RED-VENTED BULBUL	<i>Pycnonotus cafer</i>
70.	RUFIOUS-TAILED SHRIKE	<i>Lanius isabellinus</i>
71.	BAY-BACKED SHRIKE	<i>L. vittatus</i>
72.	RUFIOUS-BACKED SHRIKE	<i>L. schach</i>
73.	ORIENTAL MAGPIE-ROBIN	<i>Copsychus saularis</i>
74.	EURASIAN BLACKBIRD	<i>T. merula</i>
75.	COMMON STONECHAT	<i>Saxicola torquata</i>
76.	PIED BUSHCHAT	<i>S. caprata</i>
77.	GREY BUSHCHAT	<i>S. ferrea</i>
78.	INDIAN CHAT	<i>Cercomela fusca</i>
79.	COMMON BABBLER	<i>Turdoides caudata</i>
80.	LARGE GREY BABBLER	<i>T. malcolmi</i>
81.	JUNGLE BABBLER	<i>T. striata</i>
82.	COMMON TAILORBIRD	<i>Orthotomus sutorius</i>
83.	COMMON CHIFFCHAFF	<i>Phylloscopus collybita</i>
84.	ASHY PRINIA	<i>P. socialis</i>
85.	JUNGLE PRINIA	<i>P. sylvatica</i>
86.	GREENISH LEAF-WARBLER	<i>P. trochiloides</i>
87.	RUSTY-TAILED FLYCATCHER	<i>Muscicapa ruficauda</i>
88.	VERDITER FLYCATCHER	<i>Eumyias thalassina</i>
89.	GREY-HEADED FLYCATCHER	<i>Culicicapa ceylonensis</i>
90.	CRESTED BUNTING	<i>Melophus lathami</i>
91.	ORIENTAL WHITE-EYE	<i>Zosterops palpebrosus</i>
92.	PURPLE SUNBIRD	<i>Nectarinia asiatica</i>
93.	HOUSE SPARROW	<i>Passer domesticus</i>
94.	SPOTTED MUNIA	<i>L. punctulata</i>
95.	WHITE-THROATED MUNIA	<i>Lonchura malabarica</i>
96.	BRAHMINY STARLING	<i>S. pagodarum</i>
97.	COMMON STARLING	<i>S. vulgaris</i>
98.	INDIAN TREEPIE	<i>Dendrocitta vagabunda</i>
99.	COMMON MYNA	<i>Acridotheres tristis</i>
100.	EURASIAN GOLDEN ORIOLE	<i>Oriolus oriolus</i>
101.	WHITE-BELLIED DRONGO	<i>D. caerulescens</i>
102.	JUNGLE CROW	<i>Corvus macrorhynchos</i>
103.	ASIAN PIED STARLING	<i>S. contra</i>

**TABLE 2- List of Avifauna of the study area.**

#### IV. RESULTS AND DISCUSSION

Based on different observations from January 2009 to December 2011, 103 species of the avifauna of 35 families were noticed. Out of these birds, some birds are of resident status, and some are of Migrant status. In migrant species, some birds are summer visitors, and some are winter visitors. Based on villager's interviews and views, the number of common birds decreased in the last ten years. Such a decline in the number of avifauna may be due to deforestation and destruction in birds' habitats. Industrialization and radiation may be a significant cause of the decrease in avian diversity; earlier studies corroborate results with the present findings [12], [13], [14], [15] [16], [17] and [18]. Some developmental plannings show the negative effect of avifauna, but conservative plannings may protect avian biodiversity.

#### V. CONCLUSION

The Ministry of Environment and Forests is the right agency in India's Government to plan, promote, coordinate, and implement environmental and forestry programs. Some places in the study area maybe act as hot spots for birds for birding points, but they need proper projects and planning.

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