

# **Birds Species Spectrum of Western Yamuna Canal (WYC) Region of Haryana**

**Dr. Gian Bhushan**

Guru Nanak Khalsa College, Yamuna Nagar  
GIANGNKCY@GMAIL.COM

## **Abstract:**

Indian biodiversity includes large number of species of invertebrates, 2546 species of fishes, 204 species of amphibians, 446 species of reptiles, 1228 species of birds and over 500 different species of mammals. Avifaunal study was carried out in along the Western Yamuna Canal Region from Yamuna Nagar to Karnal during January 2022 to December 2022. Different Species of birds were recorded on vegetation along roadside, electrical wires and the periphery of the canal during the study period. The present studies reveal that 49 species of birds which are commonly witnessed in rural areas belonging to 29 different families. Anatidae was the most dominant family containing 9 birds species followed by Columbidae, Corvidae and Charadriidae families having 3 birds species each and family Alcedinidae, Motacillidae, Phasianidae, Cuculidae, Sturnidae and Rallidae families containing 2 birds species each and remaining families one bird species each of the total number of bird species observed. The most commonly found birds are: House Sparrow, Cattle Egret, Jungle Babbler, Asian Koel, Common Myna, Blue Rock Pigeon, Yellow-footed Green Pigeon, Spotted Dove, Black Drongo, Indian Treepie, Red Vented Bulbul and White Wagtail. The various aspects of Birds of Western Yamuna Canal Region (WYC) from Yamuna Nagar to Karnal would be discussed.

**Keywords:** Birds Species Spectrum, Haryana, Wetland Birds, Western Yamuna Canal Region,

## **1. INTRODUCTION**

The Haryana State of North India is one of the 29 states in India. It was carved out of the former state of East Punjab on 1 November 1966 on a linguistic basis. It stands 21st in terms of its area, which is spread about 17,070 sq mi. Haryana State borders with Punjab and Himachal Pradesh to the north and Rajasthan to the west and south. The river Yamuna defines its eastern border with Uttarakhand and Uttar Pradesh. Haryana also surrounds Delhi on three sides, forming the northern, western and southern borders of Delhi. Haryana is primarily an agricultural state with almost 80% of its land under cultivation. The geographical area of the state is 44212 sq. km which is 1.3% of India's geographical area. It is not bestowed with bounty of natural forests and only 3.9% of its geographical area is under notified forests. The Forest and Tree Cover of the Haryana state is 6.49% of its geographical area. Forestry activities in the state are dispersed over rugged Shiwalik Hills in north, Aravalli hills in south, sand dunes in west and wastelands, saline-alkaline lands and waterlogged sites in the central part of the state. The Aravallis and the Shiwaliks are its two biodiversity hot spots in Haryana. The Haryana state of north India has 2 National Parks, 8 Wildlife Sanctuaries, 2 Wildlife Conservation Areas, 4 Animal & Bird Breeding

Centers, 1 Deer park and 49 herbal parks which are managed by the Forests Department, Haryana of the Government of Haryana. Hunting and poaching is illegal in all protected wildlife areas. Birds are distributed throughout the world in a variety of Habitats. Birds have played a unique role in the growth; protection and restoration of natural environment and thus their importance and significance and in the maintenance of clean and healthy environment are of a high order. Avian diversity plays a vital role in ecological assessment, serving as a significant indicator for both qualitative and quantitative evaluation of various habitats. Studies of avifaunal diversity are an essential ecological tool in the ecosystem. Bird species not only add aesthetic value to our life but also help in control of pest in agricultural crops, dispersal of seeds and also in maintaining a healthy ecological balance, thus they form an important components in natural ecosystem. Western Yamuna Canal (WYC) is canal in river Yamuna that was dug out and renovated by Firoz Shah Tughlaq in 1335. The Yamuna Riverine area like Hathnikund Barrage and Kalesar Wildlife Sanctuary are significant habitats for various bird species, including migratory birds. The various aspects of Birds of Western Yamuna Canal (WYC) Region from Yamuna Nagar to Karnal (Karnal is one of the cities of Haryana and the Name Karnal is derived from famous character Karan) would be discussed.

## **2. Literature Review**

The Haryana State is endowed with a rich biodiversity of bird species. Out of 1228 bird species found in Indian sub continent, approx. 600 species are found in Haryana. The Yamuna River, one of India's most significant and revered waterways, has nurtured a diverse range of plant and animal life (Priyanka 2012). Birds are integral components of natural ecosystems, occupying a crucial position in the food chain. They are closely tied to ecosystem services, such as acting as pollinators, facilitating seed dispersal, regulating pollution, providing sustenance for other animal predators, and contributing to nutrient recycling processes (Padmavathy et al 2010, Jatav et al 2022). Few scientists studied avian diversity at Hathnikund Barrage in Yamuna nagar. Avian fauna of Kalesar forests in immediate vicinity has been analyzed by Kalsi (1998). Other scientists like Bahuguna et al. (2008), Tak et al. (2010), Gupta and Kaushik (2011) and Gupta et al. (2012) have studied birds of this region. (Priyanka, 2018). Urbanization has been recognized as a major driver of biodiversity loss, with significant implications for avian species. Numbers of bird species found in Haryana are around 628. Many new species have been added to the Indian Checklist since the publication of Ali and Ripley's (1968-1975) Handbook of birds of India and Pakistan, which is considered the Bible of Indian Ornithology.

## **Research Objectives**

The study aims to:

- Assess the abundance and distribution of bird species of Western Yamuna Canal (WYC) Region from Yamuna Nagar to Karnal
- Examine the impact of urban development on bird biodiversity of Western Yamuna Canal (WYC) Region.

### 3. RESEARCH METHODOLOGY

Surveys were conducted in different areas of the Western Yamuna Canal (WYC) Region from Yamuna Nagar to Karnal in January 2022 to December 2022. The areas were selected to include diverse habitat types like forested area, grassland, agriculture, wetland, fallow land, parks along the Western Yamuna Canal Region. All the habitat categories were visited twice every month from January 2022 to December 2022. Birds were identified using a pair of binoculars. Data was gathered through transect walks from one count point to another for the opportunistic sightings of birds. During surveys, birds were identified while being stationary and while walking slowly on various paths. During each count, all bird species and individual bird calls were identified. Birds are active, energetic animals and quickly fly. Quick eye spotting is required in order to get possible detail in short span of time. The birds' species spectrum in different study areas is given in the Table 1.

**TABLE 1. BIRDS SPECIES SPECTRUM IN DIFFERENT STUDY AREAS.**

Sr. No.	Scientific Name	Common Name	Family	Habitat Area	Abundance Status
1.	Bubulcus ibis	<b>Cattle egret</b>	Ardeidae	Yamuna Nagar, Ladwa, Indri, Karnal	Very Common
2.	Anser indicus	<b>Bar Headed Goose</b>	Anatidae	Yamuna Nagar, Karnal	Common
3.	Anser anser	<b>Greylag Goose</b>	Anatidae	Yamuna Nagar, Karnal	Common
4.	Anas clypeata	<b>Northern Shoveller</b>	Anatidae	Yamuna Nagar, Karnal	Common
5.	Anas acuta	<b>Northern Pintail</b>	Anatidae	Yamuna Nagar, Karnal	Common
6.	Anas platyrhynchos	<b>Mallard</b>	Anatidae	Yamuna Nagar, Karnal	Very Common
7.	Aythya ferina	<b>Common Pochard</b>	Anatidae	Yamuna Nagar, Karnal	Common
8.	Aythya fuligula,	<b>Tufted Pochard</b>	Anatidae	Yamuna Nagar, Karnal	Common
9.	Tadorna ferruginea	<b>Brahminy Shelduck</b>	Anatidae	Yamuna Nagar, Karnal	Common
10.	Rhodonessa rufina	<b>Red-crested Pochard</b>	Anatidae	Yamuna Nagar, Karnal	Common
11.	Ocyrceros birostris	<b>Indian grey Hornbill</b>	Bucerotidae	Yamuna Nagar, Karnal	Common
12.	Spilopelia chinensis	<b>Spotted Dove</b>	Columbidae	Yamuna Nagar, Karnal	Common

13.	<i>Columba livia</i>	<b>Rock Pigeon</b>	Columbidae	Yamuna Nagra, Ladwa, Indri, Karnal	Very Common
14.	<i>Treron phoenicopterus</i>	<b>Yellow-footed green Pigeon</b>	Columbidae	Yamuna Nagar, Karnal	Common
15.	<i>Dendrocitta vagabunda</i>	<b>Indian Treepie</b>	Corvidae	Yamuna Nagar, Indri, Karnal	Common
16.	<i>Corvus splendens</i>	<b>House Crow</b>	Corvidae	Yamuna Nagar, Indri, Karnal	Very Common
17.	<i>Corvus macrorhynchos</i>	<b>Jungle Crow</b>	Corvidae	Yamuna Nagar, Indri, Karnal	Common
18.	<i>Megalaima viridis</i>	<b>White-cheeked Barbet</b>	Megalaimidae	Yamuna Nagar, Karnal	Common
19.	<i>Turdoides striata</i>	<b>Jungle Babbler</b>	Leiothrichidae	Yamuna Nagar, Karnal	Very Common
20.	<i>Chrysomma sinense</i>	<b>Yellow eyed Babbler</b>	Paradoxornithidae	Yamuna Nagar, Karnal	Common
21.	<i>Hirundo rustica</i>	<b>Barn Swallow</b>	Hirundinidae	Yamuna Nagar, Karnal	Common
22.	<i>Eudynamis scolopacea</i>	<b>Asian Koel</b>	Cuculidae	Yamuna Nagar, Ladwa, Indri, Karnal	Very Common
23.	<i>Centropus sinensis</i>	<b>Greater Coucal</b>	Cuculidae	Yamuna Nagar, Ladwa, Indri, Karnal	Common
24.	<i>Icterus nigrogularis</i>	<b>Yellow Oriole</b>	Icteridae	Yamuna Nagar, Ladwa, Indri, Karnal	Common
25.	<i>Sterna aurantia</i>	<b>River tern</b>	Laridae	Yamuna Nagar, Indri, Karnal	Very Common
26.	<i>Saxicoloides fulicatus</i>	<b>Indian robin</b>	Muscicapidae	Yamuna Nagar, Karnal	Common
27.	<i>Leptocoma zeylonica</i>	<b>Purple-rumped sunbird</b>	Nectariniidae	Yamuna Nagar, Karnal	Common
28.	<i>Vanellus duvaucelii</i>	<b>River Lapwing</b>	Charadriidae	Yamuna Nagar, Karnal	Common
29.	<i>Vanellus indicus</i>	<b>Red-Wattled Lapwing</b>	Charadriidae	Yamuna Nagar, Karnal	Common
30.	<i>Vanellus malabaricus</i>	<b>Yellow Wattled</b>	Charadriidae	Yamuna Nagar, Karnal	Common

		<b>Lapwing</b>			
31.	Passer domesticus	<b>House Sparrow</b>	Passeridae	Yamuna Nagar, Ladwa, Indri, Karnal	Less Common
32.	Pycnonotus cafer	<b>Red-vented bulbul</b>	Pycnonotidae	Yamuna Nagar, Ladwa, Indri, Karnal	Very Common
33.	Psittacula krameri	<b>Rose Ring-Parakeet</b>	Psittaculidae	Yamuna Nagar, Ladwa, Indri, Karnal	Very Common
34.	Acridotheres tristis	<b>Common Myna</b>	Sturnidae	Yamuna Nagar, Ladwa, Indri, Karnal	Very Common
35.	Acridotheres ginginianus	<b>Bank Myna</b>	Sturnidae	Yamuna Nagar, Ladwa, Indri, Karnal	Very Common
36.	Halcyon smyrnensis	<b>White Throated Kingfisher</b>	Alcedinidae	Yamuna Nagar, Ladwa, Indri, Karnal	Common
37.	Alcedo atthis	<b>Common Kingfisher</b>	Alcedinidae	Yamuna Nagar, Ladwa, Indri, Karnal	Common
38.	Haliastur indus	<b>Brahminy Kite</b>	Accipitridae	Yamuna Nagar, Ladwa, Karnal	Less Common
39.	Upupa epops	<b>Eurasian Hoopoe</b>	Upupidae	Yamuna Nagar, Ladwa, Indri, Karnal	Common
40.	Dicrurus macrocercus	<b>Black Drongo</b>	Dicruridae	Yamuna Nagar, Ladwa, Indri, Karnal	Very Common
41.	Motacilla alba	<b>White Wagtail</b>	Motacillidae	Yamuna Nagar, Ladwa, Indri, Karnal	Common during Winters
42.	Anthus rufulus	<b>Paddyfield Pipit</b>	Motacillidae	Yamuna Nagar, Karnal	Common
43.	Lonchura punctulata	<b>Scaly Breasted Munia</b>	Estrildidae	Yamuna Nagar, Ladwa, Indri, Karnal	Common
44.	Francolinus pondicerianus	<b>Grey Francolin</b>	Phasianidae	Yamuna Nagar, Karnal	Common
45.	Pavo cristatus	<b>Indian Peafowl</b>	Phasianidae	Yamuna Nagar, Ladwa, Karnal	Rare

46.	<i>Amaurornis phoenicurus</i>	<b>White-Breasted Waterhen</b>	Rallidae	Yamuna Nagar, Karnal	Common
47.	<i>Fulica atra</i>	<b>Common Coot</b>	Rallidae	Yamuna Nagar, Karnal	Common
48.	<i>Merops orientalis</i>	<b>Asian Green bee-eater</b>	Meropidae	Yamuna Nagar, Karnal	Very Common
49.	<i>Gallus gallus</i>	<b>Red Jungle Fowl</b>	Phasianidae	Yamuna Nagar, Ladwa, Indri, Karnal	Common

All identifications are based on Ali and Ripley (1987) and The Book of Indian Birds by Salim Ali. (1996).

## 4. RESULT AND DISCUSSION

The present studies reveal that 49 species of birds which are commonly witnessed in rural areas and these birds belong to 29 different families. Anatidae was the most dominant family containing 9 bird species followed by Columbidae and Corvidae as well as Charadriidae 3 bird species each and family Alcedinidae, Motacillidae, Phasianidae, Cuculidae, Sturnidae and Rallidae 2 bird species each and remaining families one bird species each of the total number of bird species observed. In the present studies we can conclude that studied areas attract migratory birds like Northern Shoveller (*Anas clypeata*), Northern Pintail (*Anas acuta*), Bar-headed Goose (*Anser indicus*), Common Coot (*Fulica atra*), Common Pochard (*Aythya ferina*), Tufted Pochard (*Aythya fuligula*), and Red crested Pochard (*Rhodonessa rufina*) and River Tern (*Sterna aurantia*) etc. during winter season every year. The most commonly found birds are: House Sparrow, Cattle Egret, Jungle Babbler, Asian Koel, Common Myna, Blue Rock Pigeon, Yellow-footed Green Pigeon, Spotted Dove, Black Drongo, Indian Treepie, Red Vented Bulbul and White Wagtail. The difference in bird diversity across different habitats might be associated with the availability of food, roosting and nesting sites, predation pressure and disturbance (Hossain and Aditya 2016). Trees along riverbanks also influence the species richness and abundance of bird species (Mistry 2015). The highest numbers of species were recorded in Yamuna Nagar and Karnal when compared with other sites due to some habitat heterogeneity. The patches of tall wooded trees, scrub and bushy type stumpy vegetation, grasses and wetlands augmented resource variety to sustain different bird species (Kumar and Sahu 2019). The quality and quantity of food available is the key factor that determines the distribution and abundance of birds in a given habitat same as in the selected sites of the Yamuna River (Mukhopadhyay and Mazumdar (2017). The study highlights significant bird diversity along the Western Yamuna Canal (WYC) Region documenting 49 bird species spanning 29 families. This diversity underscores the Yamuna River ecosystem's importance as a habitat for diverse bird species. Anatidae was the most dominant family, housing maximum number of the observed species. Insights into conservation status reveal a substantial proportion of migrant birds, emphasizing the need to preserve these habitats. Additionally, the study brings attention to rare and less common



species, warranting specialized conservation efforts. Habitat heterogeneity across different sites along the WYC contributes to varied bird species. The urban development has a negative impact on avian faunal diversity as it had destroyed the habitats of the various birds species on the way from Yamuna Nagar to Karnal.

## REFERENCES

1. Ali, S. and Ripley, S.D. (1987) Handbook of birds of India and Pakistan, Compact Edition, Oxford University Press, Mumbai.
2. Ali, S. (1996) The birds of Indian Birds. Bombay Natural History Society, Oxford University Press, Mumbai.
3. Abbas, S., Tabassum, R., Khan, M.Z., Khan, B., Hussain, S., Khan, G. and Awan, S. (2014). Avian diversity in Central Karakoram National Park, Gilgit-Balistan. International Journal of Agriculture and Biology. **16**(2):377-382.
4. Bahuguna, A., Sati, J. P. and Tak, P. C. (2008). Sighting of Black Stork (*Ciconia nigra*) in Kalesar National Park, Yamunanagar district, Haryana, India. Newsl. For Birdwatchers 48 : 49-50.
5. BirdLife International (2016) Country profile: India. Available from: <http://www.birdlife.org/datazone/country/india>.
6. Chilke, A.M. (2012). Avian diversity in and around Bamanwada lake of Rajpura, district Chandrapur (Maharashtra). Annals of Biological Research. 3 (4) :2014-2018.
7. Ghorade, I.B., Thakur, V.R. and Patil, S.S. (2014). Diversity of avian fauna from Jaikwadi reservoir at Paithan. European Academic Research. 2 (2) : 1967-1978.
8. Gupta, R. C. and Kaushik, T. K. (2011). Insight into wetland winter migratory avian biodiversity in Hathnikund Barrage in Haryana state in India. Int. J. Life Sci. 5 : 39-43. Kalsi, R. S. (1998).
9. Gupta, R. C., Chandna, P. and Kaushik, T. K. (2012). An analysis of avian fauna of Tajewala Reservoir in Yamunanagar district in Haryana, India. Nature Conservators 24 : 13-18.
10. Hossain A and Aditya G (2016). Avian diversity in agricultural landscape: records from Burdwan, West Bengal, India. Proceedings of the Zoological Society 69, 38-51.
11. Kumar P and Sahu S 2019. Avian diversity in agricultural landscapes of district Panipat, Haryana, India. Asian Journal of Conservation Biology (2): 188-198
12. IUCN. 2018, Birdlife International. The IUCN Red List of Threatened Species. [WWW.iucnredlist.org](http://WWW.iucnredlist.org)
13. Jatav, SK, Kardani HK, Katara S and Singh C 2022. Avifaunal diversity of mangrove along Sikka coast, Gulf of Kachchh, Gujarat. Journal of Experimental Zoology, India **25**(2): 1397-1400.
14. Mistry J 2015. Avifaunal diversity in and around Berhampur, Murshidabad district, West Bengal, India. International Journal of Fauna and Biological Studies **2**(4): 06-10.
15. Padmavathy A, Alexandar R and Anbarashan M 2010. Diversity of birds in Ouster Wetland, Puducherry, India. Our Nature **8** (1): 247-253.
16. Priyanka 2012. Investigations on avian fauna diversity in a selected section of Yamuna basin in Haryana. Ph.D. Thesis. Kurukshetra University, Kurukshetra.
17. Priyanka 2018. Diversity and Status of Wetland Birds in and around Yamuna River at Hathnikund Barrage in Yamunanagar District in Haryana, India. Annals of Biology **34** (3) : 317-319,



18. Srinivasulu, C. and Nagulu, V. (2001). Mammalian and Avian diversity of the Nallamala Hills, Andhra Pradesh. Zoo's Print Journal. **17** (1): 675-684.
19. Mukhopadhyay S and Mazumdar S 2017. Composition, diversity and foraging guilds of avifauna in a suburban area of southern West Bengal, India. The Ring **39**(1): 103-120.
20. Tak, P. C., Sati, J. P. and Rizvi, A. N. (2010). Status of waterbirds at Hathnikund Barrage, Yamunanagar district, Haryana, India. J. Threatened Taxa. **2** : 841-844.
21. oological SociIUCN. 2018, Birdlife International. The IUCN Red List of Threatened Species. WWW.iucnredlist.org.