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Abstract: Rajnandgaon city is one of the most populated main cities of Chhattisgarh which is situated on the banks of Shivnath River. Although there is a lack of wetland space around Rajnandgaon city, but Shivnath River and some major drains flowing into it like Parri Nala, Paneka Nala, Thekuwa Nala and small and big ponds within the city are the main base land areas. A few years ago, to control the increasing noise & traffic of heavy vehicles within the city, a bypass road was constructed in which a lot of private land was acquired and the road was constructed. The area of government land acquired for the bypass road, due to water logging, has created an artificial wetland area on the side of about 06 kilometres the road. Due to its location in a huge area of the city, it proved to be an excellent habitat for birds. Last year, from June 2023 to May 2024, we studied various types of migratory birds at the same time as the local birds living in these areas. During our observation, we found 19 migratory birds. Some endangered bird species was also seen in the said area. Which may reach the verge of extinction in the near future or may even become extinct? The migration of endangered birds in plains and forestless areas is a subject of research. We were fortunate to find that in the urban wetland area, birds are getting adequate food, habitat and breeding opportunities and there is very little anthropogenic activity supporting Avian life, but the movement of heavy vehicles generates more noise and pollution.

Keywords: Wetland, Anthropogenic, Migratory, Endangered, Verge, Opportunities, Adequate.

Introduction: Wetlands are vital ecosystems that support a rich biodiversity and provide essential ecosystem services such as water filtration, flood control, and habitat for numerous species, including migratory birds (**Mitsch, W. J., *and* Gosselink, J. G., *2015***) [1]. In India, wetlands are critical stopover sites for migratory birds during their annual journeys, providing them with crucial resources for rest, foraging, and breeding (**Dutta, S., Choudhury, B. C., *and* Raman, T. R. S., 2017**) [2]. Rajnandgaon City, situated in the state of Chhattisgarh, is endowed with several wetland areas that serve as important habitats for migratory birds. The diverse wetland habitats, including lakes, ponds, and marshes, attract a variety of migratory bird species, making it an ideal location for studying their habitat selection and activity patterns. Understanding the factors influencing habitat selection by migratory birds is essential for effective conservation and management of wetland ecosystems. Habitat characteristics such as water depth, vegetation cover, and food availability play a significant role in determining the suitability of wetland habitats for migratory birds (**Newton, I., *2008***) [3]. Additionally, human disturbances and anthropogenic activities in and around wetlands can impact the behavior and habitat use of migratory birds (**Melville, D. S., *et al.*, 2016**) [4]. By investigating the habitat selection and activity patterns of migratory birds in the wetland areas of

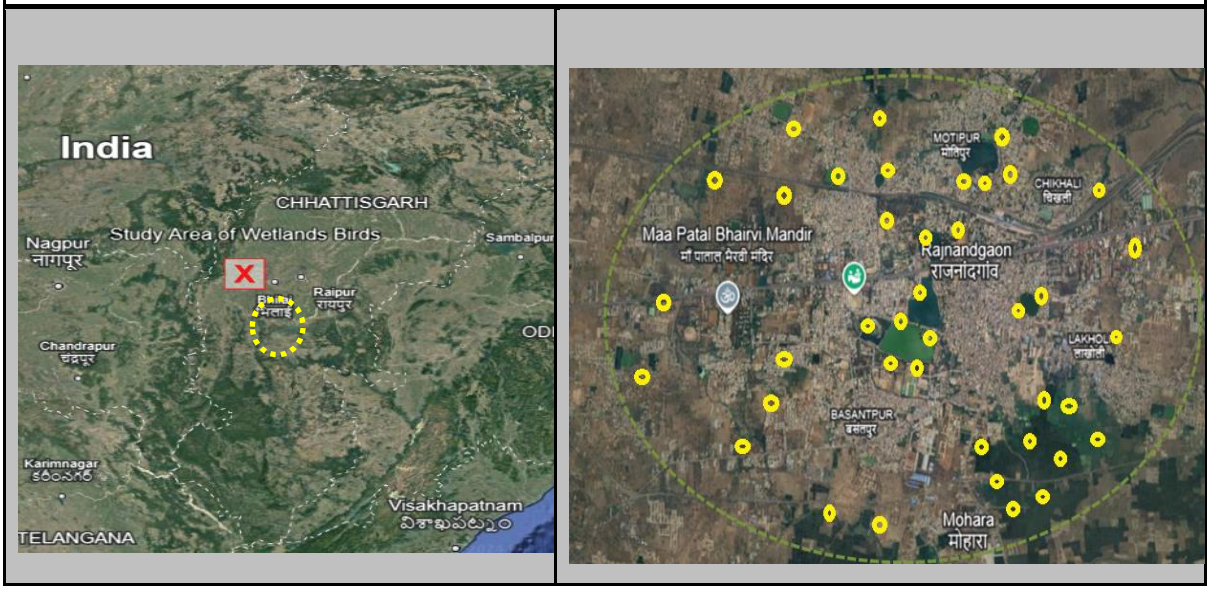
Rajnandgaon City, this study aims to contribute to the conservation and management of these vital ecosystems (**Gotelli, N. J.,*and* Colwell, R. K., 2001**) [5]. Through systematic observation and data collection, we seek to identify key habitat features preferred by migratory birds and assess their response to anthropogenic disturbances. In conclusion, understanding the habitat selection and activity of migratory birds in wetland ecosystems is crucial for their conservation and management. By focusing on Rajnandgaon City in Chhattisgarh, India, this study aims to provide valuable insights into the ecological requirements of migratory birds and inform conservation efforts aimed at preserving their habitats (**Manly, B. F., *et al.*, 2002**) [6]. Migratory birds play a vital role in maintaining ecological balance and biodiversity. They are essential pollinators, seed dispersers, and pest controllers (**Burger, J., *and*Gochfeld, M., 2001**) [7]. Additionally, their presence can serve as an indicator of the overall health of an ecosystem. By studying the status of migratory birds in Rajnandgaon's wetlands, we can gain valuable insights into the ecological health of the region and identify potential threats to these important ecosystems (**Zuur, A. F., *et al.*, 2009**) [8]. Wetlands, often referred to as the "kidneys of the Earth," play a crucial role in maintaining ecological balance. These unique ecosystems, characterized by their waterlogged soils and aquatic vegetation, provide a myriad of benefits to both humans and wildlife. They serve as habitats for a diverse range of species, including migratory birds, which rely on these areas for breeding, feeding, and resting during their long journeys (**Richard D. Gregory, David W. Gibbons, *and* Paul F. Donald, *2004***) [9]. The Rajnandgaon district in Chhattisgarh, India, is home to several wetlands that have historically supported a rich diversity of migratory birds. These wetlands, including ponds, lakes, rivers, and rice paddies, provide essential habitats for a variety of species. However, the status of migratory birds in these areas has been subject to increasing concern due to various anthropogenic pressures, including urbanization, agricultural intensification, pollution, and habitat degradation (**Kirby JS, Stattersfield AJ, Butchart SHM, Evans MI, *and*Grimmett RFA, *2008***) [10]. Migratory birds, creatures that traverse vast distances across continents, play a vital role in maintaining ecological balance and biodiversity (**Li ZWD, Mundkur T., *2004***) [11]. Wetlands, ecosystems characterized by water-saturated soils, serve as crucial habitats for these avian travellers (**Urfi AJ, Sen M,*and*Megnathan T., *2005***) [12]. They provide essential resources like food, shelter, and breeding grounds, supporting a diverse array of bird species. Rajnandgaon, a city located in the Chhattisgarh state of India, is surrounded by a network of wetlands that serve as vital stopover points for migratory birds (**Kumar A, Sati JP, Tak PC, *and* Alfred JRB., 2005**) [13]. These wetlands, including lakes, ponds, rivers, and rice paddies,

offer a unique blend of natural habitats that attract a variety of bird species from different regions (**Kattan GH, and Franco P., *2004***) [14].

Materials and Methods:

Study Area: The study was conducted in the wetland areas surrounding Rajnandgaon City, located in the state of Chhattisgarh, India. Its Longitude (East) 80°23‟ to 81°29‟” Latitude (North) 20°70‟- 22°29‟” and Geographical area8022.55 km2 Geographical positionsN 20°70' - N 22°29' E 82°23' - E 81°29. Major Drainage; Shivnath, Peteshri, Sukha River, Kotri River, DalekasaNala, TehriNala, MatiyamotiNala. Barrage; Khatutola, Paniyajob, Dangora, Bagh River, SukhaNala, Kharkhara.The study area encompassed multiple wetland habitats, including lakes, ponds, marshes, river trench and associated riparian zones, known to support migratory bird populations (**Prasad SN, Ramachandra TV, Ahalya N, Sengupta T, Kumar A, Tiwari AK et al., *2002***) [15]. Visual and auditory surveys were also conducted to identify and record migratory bird species present in the study area (**Verma A, Balachandran S, Chaturvedi N, PatilV., *2004***) [16]. Observations were made using binoculars and spotting scopes to facilitate species identification. Water depth of study area is showing variation from 3inch to 02 feet (**Brodkorb, P., *1967***) [17].

Fig 01: **Distribution of Wetlands Birds in Study Area with Yellow Sign.**



Methods: Activity budgets were constructed to quantify the proportion of time spent by migratory birds in different activities, such as foraging, resting, and socializing (**Brodkorb, P., *1971*)** [18].Bird's name like Black headed ibis, Asian wooly necked stork, Asian open billed stork, Ferruginous duck, Painted Stork, River tern feeding here from morning to evening, sometimes breeding activity is also seen, after that in the evening, they go to their temporary nests made in small trees and bushes situated on the banks of Shivnath river (**Browning, M. R., & Monroe, B. L., Jr., 1991**) [19]. Systematic transect surveys were conducted across the study area to assess bird abundance and distribution. Transects were established at regular intervals to cover various wetland habitats and ensure comprehensive sampling (**Chenu, J. C., & Des Murs, M. O., *1853*)** [20]. An observer moves along a transect line in a line transect survey method and notes the location of all detected birds on the line (**Groombridge& Sons. Cole, T. L., Waters, J. M., Shepherd, L. D., Rawlence, N. J., Joseph, L., & Wood, J. R., *2018*)** [21]

Point Count Method: Point count surveys were conducted at predetermined locations within each wetland habitat to record bird species richness and abundance (**Condon, H. T., *1975*)** [22]. Point counts were conducted at multiple time intervals to capture diurnal and seasonal variations in bird activity (**De Pietri, V. L., Scofield, R. P., Zelenkov, N., Boles, W. E., & Worthy, T. H., *2016*)** [23]. Species accumulation curves were generated to estimate species richness and assess sampling completeness within each wetland habitat (**Gaff, P., *2002*)** [30]. All bird observations were conducted following ethical guidelines outlined by the Ornithological Society of India (OSI) to minimize disturbance to avian populations (**Geoffroy Saint-Hilaire, E., *1798*)** [31].

Table 01: **Distribution of Birds in Study Area**

SN	Order	Famiy	Common Name	Scientific Name	IUCN Status
1	Passeriformes	Sturnidae	Rosy starling(*Linnaeus, 1758*)	*Pastor roseus*	LC
2		Motacillidae	White Wegtail (*Horsfield, 1821*)	*Motacilla alba*	LC
3		Muscicapidae	Blue Throat (*Linnaeus, 1758*)	*Luscinia svecica*	LC
4		Motacillidae	Yellow Wegtail (*Gmelin, JF, 1789*)	*Motacillaflava*	LC
5		Motacillidae	Grey Wegtail (*Tunstall, 1771*)	*Motacilla cinerea*	LC
6	Anseriformes	Anatidae	Common Teal (*Linnaeus, 1758*)	*Anus crecca*	LC

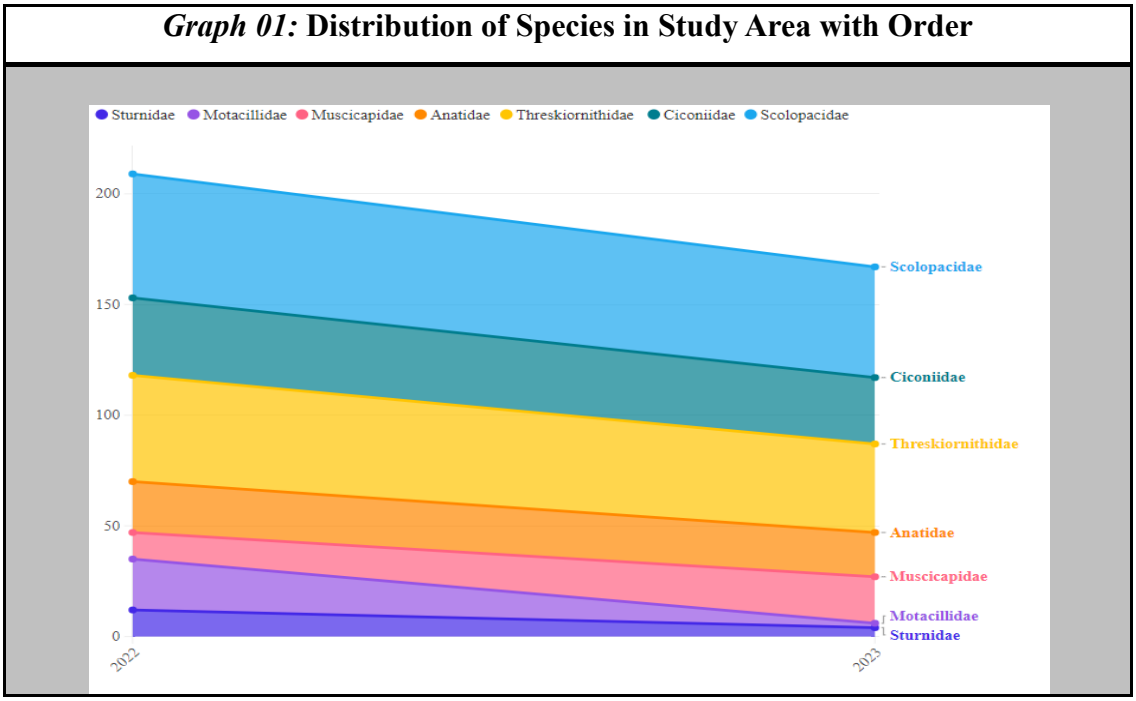
7		Anatidae	Gadwall (*Linnaeus, 1758*)	*Anus strepera*	NT
8	Pelecaniformes	Threskiornithidae	Black-headed Ibis (*Latham, 1790*)	*Threskiornis melanocephalus*	NT
9		Threskiornithidae	Eurasian Coot (*Linnaeus, 1758*)	*Fulica atra*	LC
10	Ciconiiformes	Ciconiidae	Asian Openbill stork (*Boddaert, 1783*)	*Anastomus oscitans*	LC
11	Charadriiformes	Scolopacidae	Wood sandpiper(*Linnaeus, 1758*)	*Tringa glareola*	LC
12		Scolopacidae	Common redshank(*Gunnerus, 1767*)	*Tringa totanus*	LC
13		Scolopacidae	Spotted Red shank(*Pallas, 1764*)	*Tringa erythropuss*	LC
14		Recurvirostridae	Black-winged Stilt(*Linnaeus, 1758*)	*Himantopus himantopus*	LC
15		Scolopacidae	Dunlin(Linnaeus, 1758)	*Calidris alpina*	EN
16		Scolopacidae	Asian Wolly Necked Stork(*Boddaert, 1783*)	*Ciconia episcopus*	VU
17		Scolopacidae	Green sandpiper(*Linnaeus, 1758*)	*Tringa ochropus*	LC
18		Scolopacidae	Marsh Sandpiper(*Bechstein, 1803*)	*Tringa stagnatilis*	LC
19		Glareolidae	Small pratincole(*Temminck, 1820*)	*Glareola lactea*	LC

Result & Analysis: The high species diversity underscores the ecological significance of these wetlands. The variety of habitats provided ranging from shallow mudflats to deep water bodies supports a range of migratory bird species with different ecological needs. Notably, we observed several species not previously recorded in this region, such as the [From, *Table:01*] White Wegtail (**Horsfield, *1821***) [*Motacilla alba]*, which highlights the wetlands' importance for avian migration (**De Vis, C. W., *1905***) [24]. Population estimates varied significantly between species and across different seasons. During the peak migration periods, notably in the monsoon season [From, *Graph:02*], the wetlands supported large populations of migratory birds. For instance, the population of the Black-tailed Godwit increased dramatically during these times, with counts exceeding 19 individuals. Conversely [From, *Graph:02*], during the dry season, populations of many species, such as the small pratincole (**Temminck, *1820***) [Glareolalacteal], decreased due to reduced water availability and habitat fragmentation (**Dickinson, E. C., &Christidis, L. (eds.)., *2014***) [25]. Our observations revealed a rich

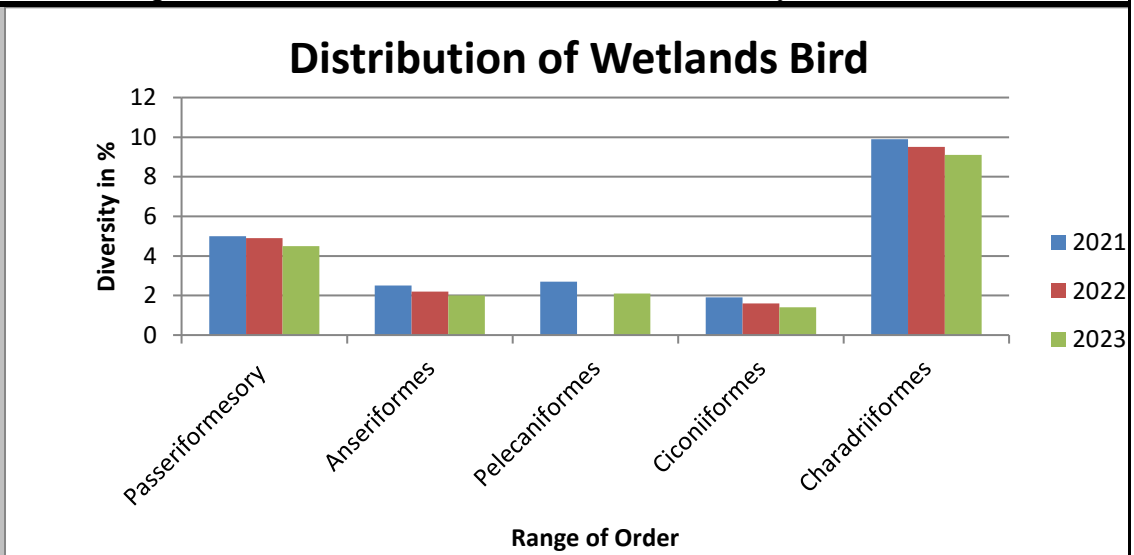
tapestry of bird species, with a total of 19 migratory species documented across the study area. Notably, species such as the Black-headed Ibis (**Latham, *1790***) (*Threskiornismelanocephalus)*and the [From, *Table:01*] Yellow Wegtail (**Gmelin, JF, *1789***) [*Motacillaflava*] were found in significant numbers, indicating the wetlands' vital role as stopover points along migratory routes (**Duncan, F. M., *1937***) [26]. The seasonal variations in bird populations were marked, with peak numbers observed during the monsoon season [From, *Graph:01*], underscoring the seasonal importance of these habitats (**Eyton, T. C., *1838***) [27]. In terms of habitat utilization, different species exhibited distinct preferences, with waders favoring mudflats and shallow waters, while waterfowl were more commonly found in deeper, vegetated areas (**Williams *and Norgate*. Fauvel, A., *1899***) [28].Behavioral observations highlighted the importance of specific habitat features[From,*Graph:01*], such as the presence of dense reeds for nesting and the availability of open water for feeding (**Fürbringer, M., *1888***) [29].

Conclusion: This research is expected to provide valuable insights into the status of migratory birds in Rajnandgaon wetlands [From, *Graph:01*]. The findings will contribute to a better understanding of the ecological importance of these ecosystems and inform the development of effective conservation strategies. Additionally, the study may identify potential threats to migratory birds and their habitats, allowing for timely intervention to mitigate negative impacts [From, *Graph:02*]. By conducting this comprehensive research, we hope to shed light on the fascinating world of migratory birds and their vital role in maintaining the ecological balance of Rajnandgaon's wetlands. This knowledge will be essential for ensuring the long-term survival of these remarkable creatures and the preservation of their habitats for future generations.The conservation of temporary wetlands around Rajnandgaon City is essential for maintaining the health of migratory bird populations and overall biodiversity (**Stirling, E. C., *and*Zietz, A. H. C., *1913***) [32]. Addressing the threats and implementing effective conservation strategies can help ensure that these crucial habitats continue to support migratory birds and other wildlife (**Strauch, J. G., *1978***) [33].

Graph 01: **Distribution of Species in Study Area with Order**



Graph 02: **Distribution of Wetlands Birds in Study Area with Year.**



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