



Status and Distribution of Water Birds in Ekana Wetland

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Abstract:

Wetlands are one of the most significant and diverse ecosystems for birds because they serve a variety of needs for survival. The study shows the variety of water birds found in the two-year surveys conducted in the Ekana Wetland. The total number of species recorded is 24. Thirteen of the twenty-four species are migratory, five are local and six are migratory. Nine insectivorous species, seven piscivorous species, four vegetarian species, two omnivorous species, and two carnivorous species are among the birds that are observed. Twenty-two bird species are classified as Least Concern, one as Near Threatened, and one as Vulnerable, according to the International Union for Conservation of Nature and Natural Resources (2008). Out of the 24 species listed, one is considered vulnerable.

Keywords: Wetland, Waterbird, Ecosystem, Ekana Wetland.

Introduction:

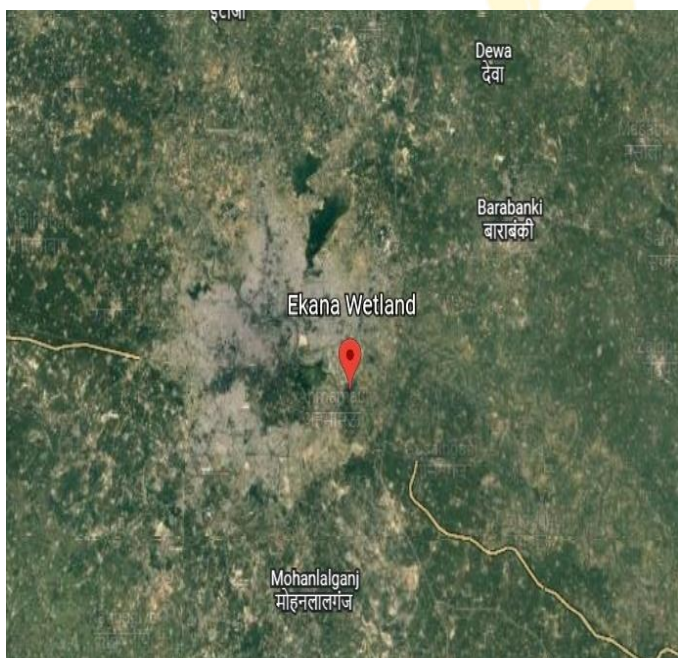
Birds Survey acknowledges that social, economic, and cultural factors are intrinsically linked to the problems that affect birds, their habitats, and our global environment. These issues can only be resolved if human societies operate in an ecologically sustainable way and if people's needs, welfare, and aspirations are taken into account in all conservation actions. Because birds provide several ecosystem services, including pollination, improved soil fertility, pest and rodent control, etc., it is necessary to protect every species of bird on Earth as well as its habitats. Among the significant and biologically diverse ecosystems that exist between aquatic and terrestrial habitats are wetlands.

Wetlands are the world's most productive and ecologically varied ecosystems, yet they are also very sensitive (Gibbs, 1993). Due to their several trophic levels in the food chain of wetland nutrient cycles, waterbirds are an essential part of most wetland ecosystems. Because waterbirds are the terminal links in many aquatic food chains and are thought to be indicators of the health of the wetland environment, their activities reflect changes that originate in several distinct ecological components (Custer and Osborne, 1977).

Materials and Methods:

Ekana Wetland is situated in Lucknow which is the capital of Uttar Pradesh. Lucknow city is surrounded by rural towns and villages: the orchard town of Malihabad, Kakori, Mohanlalganj, Gosainganj, Chihat and Itaunja. The

Geographic coordinates of Ekana Wetland are 26.8113°N 81.0154°E.



Due to unplanned urban and agriculture development industries, road construction, and disposal of dredged to a decrease in the size of Ekana wetland after 2012. Ekana is located behind the Atal Bihari Vajpayee Ekana Stadium. Ekana wetland is one of the small natural, perennial wetlands situated beside the Gomti River. The study area involves Ekana wetland and its associated areas up to 50 km. This study presents the waterbird diversity of Ekana wetland where surveys have been conducted for two years. Observations were taken during morning hours using the line transect method and point count method

with the aid of a binocular and data was supported with photography using a Canon EOS 1000 D SLR camera.

Results and Discussion:

Birds generally migrate in the post-monsoon season. The migratory birds such as Northern Pintail, Asian Open Bill, Coucal, Purple Heron, Wire-Tailed Swallow, and White Stork; the local migratory birds such as white-painted storks, spot-billed ducks, common coots, great cormorants, and laughing doves; and the residential birds such as purple moorhen, bronze-winged jacana, red-wattled lapwing, Indian cormorant, little egret, white-breasted water hen, sarus crane, pond heron, white-throated kingfisher, prinia, median egret, large egret, and little cormorant are found during the surveys.

Table 1:List of birds with their feeding habit, types and IUCN Status

S.NO	COMMON NAME	SCIENTIFIC NAME	FEEDING HABIT	BIRD TYPE	IUCN STATUS
1.	Purple Moorhen	<i>Porphyrio porphyrio</i>	I/V	R	LC
2.	Bronze Winged Jacana	<i>Metopidus indicus</i>	O	R	LC
3.	Red Wattled Lapwing	<i>Vanellus indicus</i>	I	R	LC
4.	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	P	R	LC
5.	White Painted Stork	<i>Mycteria leucocephala</i>	P	L	NT
6.	Little Egret	<i>Egretta garzetta</i>	I	R	LC
7.	Median Egret	<i>Ardea intermedia</i>	P	R	LC
8.	Large Egret	<i>Ardea alba</i>	P	R	LC
9.	White breasted Water hen	<i>Amaurnis phoenicurus</i>	I	R	LC
10.	Sarus Crane	<i>Grus antigone</i>	P	R	VU
11.	Pond heron	<i>Ardeola grayii</i>	I/P	R	LC
12.	White breasted Kingfisher	<i>Halcyon smyrnensis</i>	P	R	LC
13.	Spot Billed Duck	<i>Anas poecilorhyncha</i>	V	L	LC
14.	Northern Pintail	<i>Anas acuta</i>	V	M	LC
15.	Purple heron	<i>Ardea purpurea</i>	P	M	LC
16.	Asian Open bill	<i>Anastomus oscitans</i>	I	M	LC
17.	Coucal	<i>Centropus sinensis</i>	I	M	LC
18.	Plain prinia	<i>Prinia inornata</i>	I	R	LC
19.	Wire tailed swallow	<i>Hirundo smithi</i>	I	M	LC
20.	Common Coot	<i>Fulica atra</i>	O	L	LC
21.	Great cormorant	<i>Phalacrocorax carbo</i>	C	L	LC
22.	Little cormorant	<i>Phalacrocorax niger</i>	P	R	LC
23.	White stork	<i>Ciconia ciconia</i>	C	M	LC
24.	Laughing Dove	<i>Spilopelia senegalensis</i>	V	L	LC

Keys:**Feeding habit:**

P-Piscivorous, I-Insectivorous, O-Omnivorous, V-Vegetarian, C-Carnivorous.

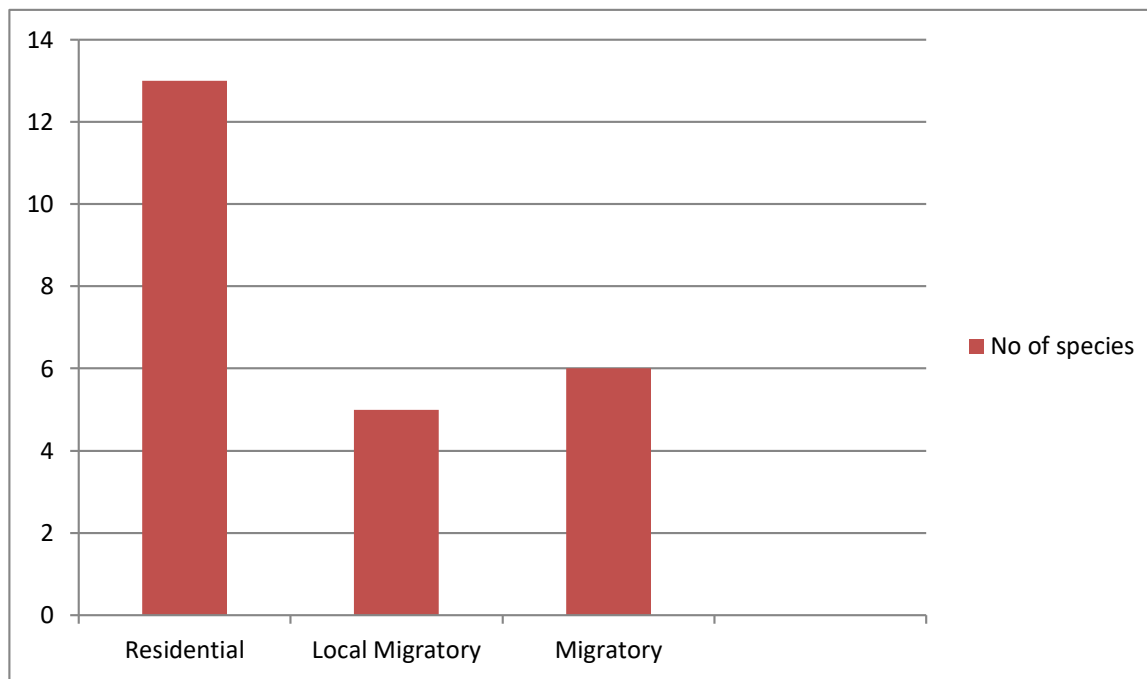
IUCN Status:

VU-Vulnerable, NT- Near Threatened, LC- Least Concern.

Bird type:

R-Residential, **M**-Migratory, **LM**-Local Migratory.

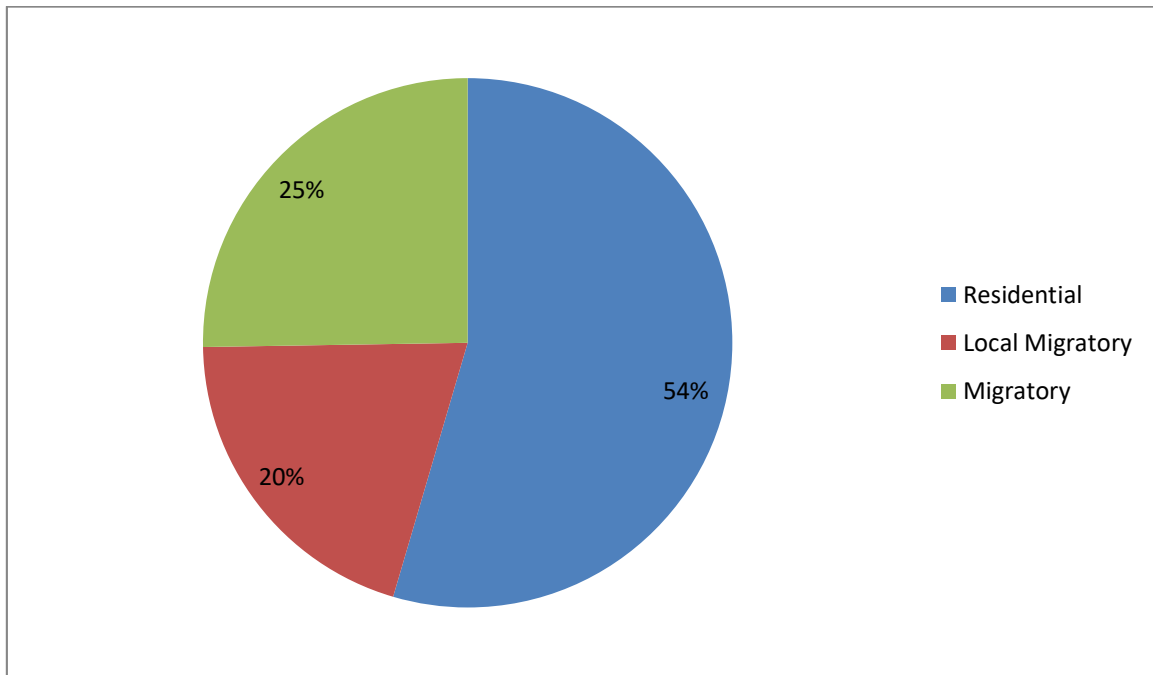
Distribution of birds has been done based on Bird Type, Feeding Habit, and IUCN Status. Out of 24 species, 13 species are Residential, 5 species are local migratory and 6 are migratory; Out of 24 species of water birds 9 species are Insectivorous, 7 species are Piscivorous, 4 species are Vegetarian, 2 species are Omnivorous and 2 species are Carnivorous and Out of 24 water bird species, 22 are Least Concern, one Near Threatened, and one Vulnerable, according to the International Union for Conservation of Nature and Natural Resources.



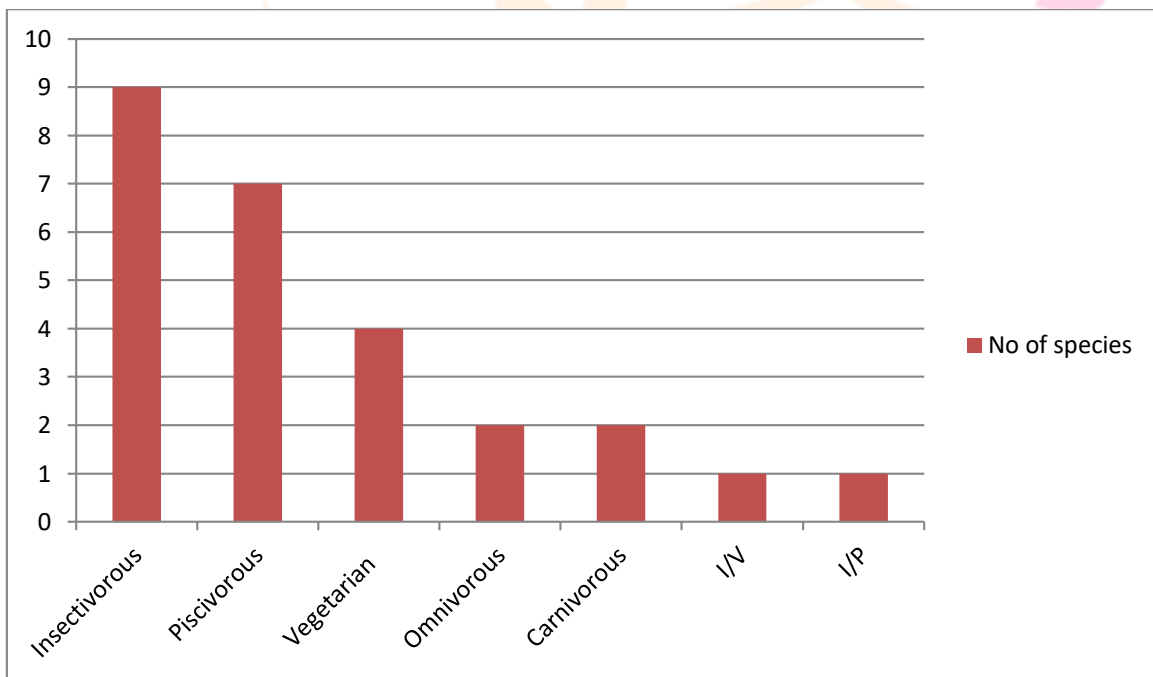
Graph 1: Species-wise distribution of birds based on bird type

Table 2: Showing diversity indices in 3 seasons during the year (2022-2024)

Diversity Indices	PRE - MONSOON	MONSOON	POST MONSOON
Dominance index	0.1557	0.1406	0.1172
Simpson index	0.8443	0.8594	0.8828
Shanon index	2.034	2.356	2.639

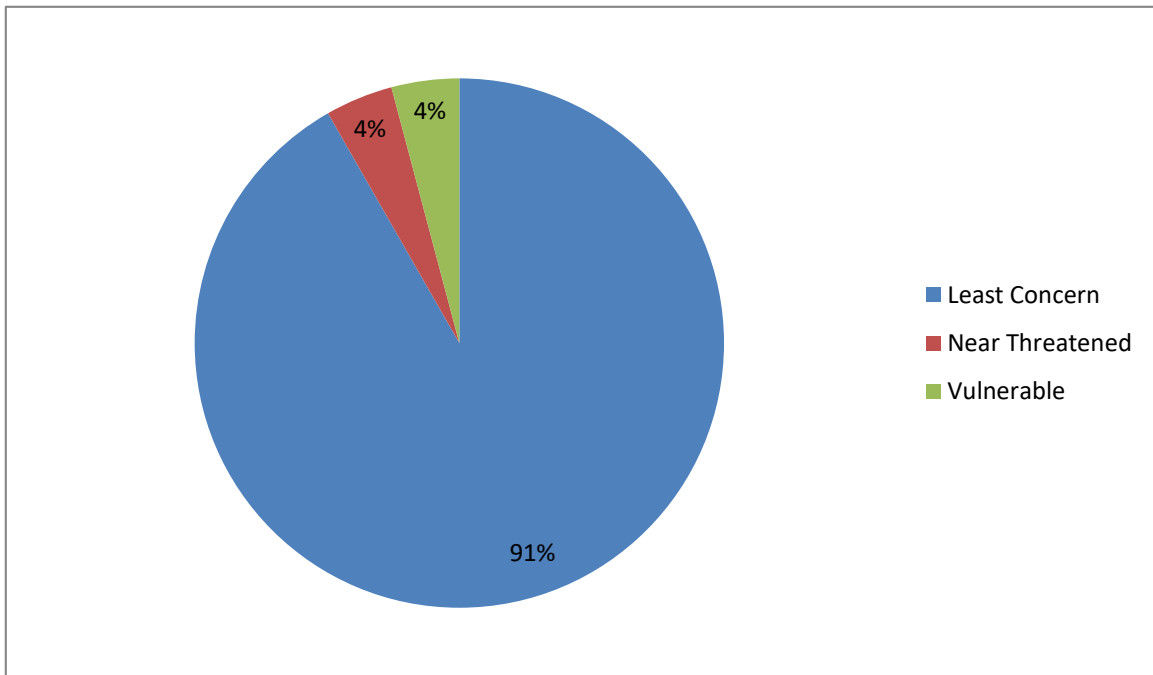


Graph 2: Percentage wise composition of birds based on bird type.



Graph 3: Distribution of birds based on feeding habit.

(Keys: I/V-Insectivorous/Vegetarian and I/P-Insectivorous/Piscivorous).



Graph 4: Species-wise percentage of birds based on IUCN Status



Spot Billed Duck



Purple Heron



Pond Heron



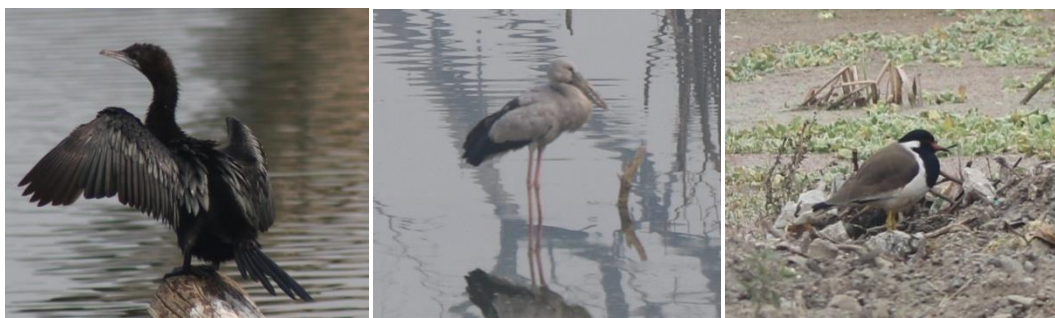
Common Coot



White Stork



Purple Moorhen



Great Cormorant

Asian Open bill

Red Wattled Lapwing

Picture credit: @ Priyanka

Glimpse of Local migratory, Residential and Migratory birds observed during the study.

Conclusion:

The study reveals that Ekana Wetland has the highest residential bird population, followed by local and migratory birds. Industrial development is affecting bird migration and reducing migratory populations. The ability of the Ekana wetland to sustain a wide variety of water birds is reflected in this study. The reduction of human activity surrounding the Ekana wetland is important. Local youngsters will be interested in and attracted to the bird-watching events held on different occasions, such as World Wetlands Day, International Day for Biological Diversity, and World Wildlife Week.

Acknowledgement:

I am grateful to all of the locals for providing such vital information for the survey, as well as to the Head of the Department of Zoology, my supervisor Prof. Syed Sadiq Abbas, and Co-Supervisor Prof. Amita Kanaujia for encouraging me to conduct this research and for providing the necessary infrastructure.

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