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Quantitative Analysis of Avian Diversity in the Aravalli Hills: A Case Study from Bandhya, Ajmer (Rajasthan)

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ABSTRACT: - If we talk about Bandhya area, it is surrounded by Aravalli Hills on three sides. Various plant species and many bird species complete their life cycle in these Aravalli hills. The Aravalli hills were also affected the increasing development here. Due to which the bird species here were also greatly affected. Therefore, the objective of the present study was to estimate the bird biodiversity found here and their actual number. Many bird species were observed here during the 18-month study. A total of 41 bird species were seen here and a list of them was prepared. Point count method was used for this.

KEYWORDS: -Foothills, Birds, Area, Biodiversity, Species.

I. INTRODUCTION

Bandhya region is situated in the foothills of the oldest mountain ranges of the world, known as the Aravalli range. It is situated on National highway no. 8 from Ajmer to Jaipur. Various species of birds are found in this area which reflect the biodiversity here. These Aravalli hills are the natural habitat of the local bird species here. Human population density is having a profound impact on these hills, which is also affecting the bird species here. Both of these are priceless heritage of nature.

This paper presents quantitative intensive observation of birds found in Bandhya area, Ajmer. This particular data is observed every month using the line transect method (point count method). This is data on bird biodiversity including all local and migratory birds reported throughout the year.

II. MATERIAL AND METHOD

Bandhya area is situated in the foothills of the Aravalli hills in the North-West. It is connected Kankarda Bhonabay in the North. This area is spread over about 2 to 3 kilo metre. Binoculars and cameras were used to identify birds and count them. Birds were observed on early morning and evening in the fixed time every day. The nomenclature of these identify birds is based on Manakdan R, Pittie A (2001). The common and scientific names of the birds seen are based on the names given by Buceros 6(1) :1-37.



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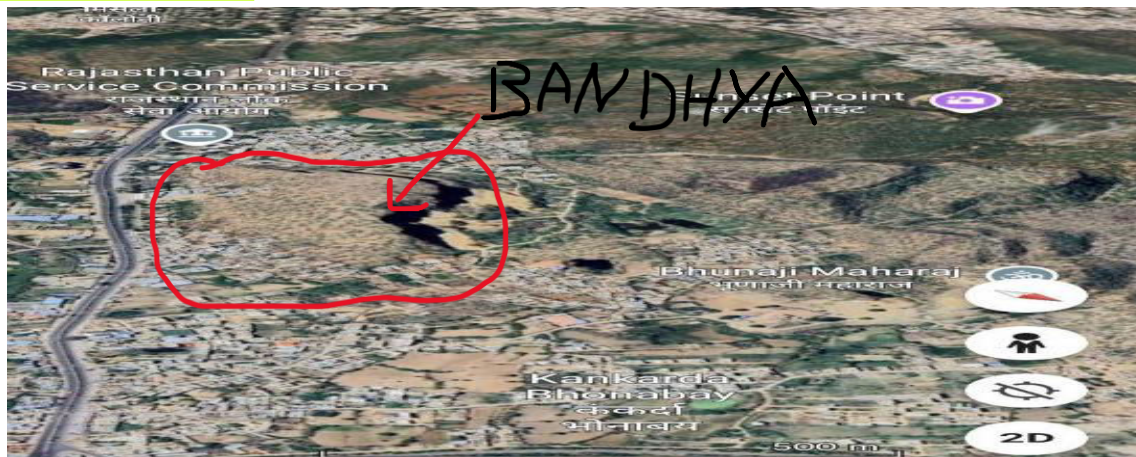


Figure 1: Satellite map of study area with highlighted Bandhya, Ajmer.



Figure 2: Satellite map of study area with highlighted Bandhya Ajmer.

III. REPRESENTATION OF COMMON AND SCIENTIFIC NAME OF BIRDS

- *Little egret (*Egretta-garzetta*)
- *Cattle egret (*Bubulcus ibis*)
- *Red wattled Lapwing (*Vanellus indicus*)
- *White Throated Kingfisher (*Halcyon smyrnensis*)
- *Common Myna (*Acridotheres tristis*)
- *Pied Myna (*Gracupica-contra*)
- *Brahminy Starling (*Sturnia-pagodarum*)
- *Black Kite (*Milvus-migrans*)
- *Shikra (*Accipiter badius*)
- *Asian Koel (*Eudynamys scolopaceus*)
- *Greater Coucal (*Centropus sinensis*)



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- *Spotted Owllet (*Athene brama*)
- *Indian Roller (*Coracias benghalensis*)
- *Red Collared Dove (*Streptopelia tranquebarica*)
- *Eurasian Collared Dove (*Streptopelia decaocto*)
- *Laughing Dove/Little Brown Dove (*Streptopelia senegalensis*)
- *Blue Rock Pigeon (*Columba livia*)
- *Rose Ringed Parakeet (*Psittacula krameri*)
- *Grey Francolin (*Francolinus-pondicerianus*)
- *Rock Bush Quail (*Perdica-argoondah*)
- *Indian Peafowl (*Pavo-cristatus*)
- *House Crow (*Corvus splendens*)
- *Indian Treepie/Rufous Treepie (*Dendrocitta vagabunda*)
- *Black Drongo (*Dicrurus macrocercus*)
- *Red Vented Bulbul (*Pycnonotus-cafer*)
- *Long Grey Babbler (*Argya malcolmi*)
- *Common Babbler (*Turdoides caudata*)
- *Jungle Babbler (*Turdoides striata*)
- *Indian Robin (*Saxicoloides fulicatus*)
- *Indian Chat/Brown Rock Chat (*Oenathe fusca*)
- *House Sparrow (*Passer domesticus*)
- *Baya Weaver (*Ploceus philippinus*)
- *Long Tailed Shrike/Rufous Backed Shrike (*Lanius Schach*)
- *Indian Silver Bill/White Throated Munia (*Euodica malabarica*)
- *Green Bee Eater/Small Bee Eater (*Merops orientalis*)
- *Common Tailor Bird (*Orthotomus sutorius*)
- *Ashy Prinia (*Prinia socialis*)
- *Purple Sun Bird (*Cinnyris asiaticus*)
- *Iberian Grey Strike (*Lanius meridionalis*)
- *Common Redstart (*Phoenicurus phoenicurus*)
- *White Brown Wagtail/Large Pied Wagtail (*Matacilla maderaspatensis*)

IV. TABLE THE MONTHLY BIRD COUNT REPORT IS AS FOLLOWS

S. no.	Common Name & Scientific name	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
		2023						2024				
1	Little egret (<i>Egretta-garzetta</i>)	1	2	2	1	1	2	2	2	3	3	3
2	Cattle egret	4	3	3	2	3	2	3	4	3	4	2



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	(<i>Bubulcus- ibis</i>)																		
3	Red wattled Lapwing (<i>Vanellus- sindicus</i>)	5	4	4	5	4	3	2	3	5	4	5	4	5	4	5	3	4	4
4	White throated kingfisher (<i>Halcyon- smyrnensis</i>)	1	1	1	–	–	1	–	–	2	1	1	–	–	1	1	–	1	–
5	Common myna (<i>Acrido- theres-tristis</i>)	4	6	6	7	4	4	3	3	7	7	6	6	5	8	7	7	4	3
6	Pied myna (<i>Gracupica- contra</i>)	2	4	2	3	4	4	3	3	5	4	5	2	2	4	5	4	3	2
7	Brahminy Starling (<i>Sturnia- pagodarum</i>)	5	7	6	4	4	3	4	4	6	5	5	4	5	6	8	7	5	4
8	Black Kite (<i>Milvus- migrans</i>)	2	2	1	1	–	1	1	–	2	2	2	2	1	2	1	–	–	–
9	Shikra (<i>Accipiter- badius</i>)	1	1	–	–	1	–	1	1	1	1	1	2	2	1	1	–	–	1
10	Asian Koek (<i>Eudynamys- scolopaceus</i>)	2	1	2	1	1	1	2	2	1	2	2	2	2	1	2	1	1	1
11	Greater Coucal (<i>Centropus- sinensis</i>)	1	2	2	1	1	2	2	2	1	1	2	1	2	2	2	1	2	1
12	Spotted Owlet (<i>Athene- brama</i>)	1	1	–	–	1	–	–	1	1	1	2	1	1	–	1	–	–	–
13	Indian Roller (<i>Coracias- benghalensis</i>)	–	1	1	–	–	1	1	1	–	1	–	–	–	1	1	1	1	–
14	Red Collared Dove (<i>Streptopelia</i> - <i>tranquebaric</i>	5	7	4	7	5	7	9	5	5	4	6	5	5	3	4	5	3	5



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	a)																		
15	Eurasian Collared Dove (<i>Streptopelia decaocto</i>)	6	3	3	5	4	6	7	4	5	3	5	6	5	3	4	4	5	6
16	Laughing Dove (<i>Streptopelia senegalensis</i>)	4	3	5	6	5	6	2	4	5	4	3	5	4	6	5	5	6	6
17	Blue Rock Pigeon (<i>Columba-livia</i>)	1 3	1 8	2 8	18	2 0	16	15	1 3	1 6	19	2 1	20	2 0	2 5	2 8	24	20	28
18	Rose Ringed Parakeet (<i>Psittacula-krameri</i>)	7	9	9	8	5	7	8	6	9	8	8	7	9	9	8	8	9	7
19	Grey Francolin (<i>Francolinus pondicerianus</i>)	4	3	3	2	2	1	2	2	3	3	4	5	4	3	2	2	2	2
20	Rock Bush Quail (<i>Perdicula-argoondah</i>)	3	2	1	—	—	2	2	—	2	2	3	3	3	2	2	1	—	—
21	Indian Peafowl (<i>Pavo-cristatus</i>)	5	9	9	8	7	5	5	8	4	5	5	4	4	8	8	9	7	5
22	House Crow (<i>Corvus-splendens</i>)	7	9	8	7	5	5	4	7	7	6	5	5	6	8	9	8	5	5
23	Indian Treepie (<i>Dendrocitta-vagabunda</i>)	2	2	1	—	—	1	1	2	2	1	2	—	2	3	2	1	1	—
24	Black Drongo (<i>Dicrurus-macrocercus</i>)	2	3	2	1	1	1	1	2	3	2	3	2	2	1	1	2	1	1
25	Red Vented Bulbul (<i>Pycnonotus-cafer</i>)	6	4	3	4	2	3	5	4	8	6	5	5	4	3	4	5	3	2



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26	Long Grey Babbler (<i>Argya-malcolmi</i>)	3	6	6	5	7	6	5	4	2	5	3	4	5	7	6	5	5	4
27	Common Babbler (<i>Turdoides-caudata</i>)	5	4	3	4	6	3	5	4	4	5	5	7	4	4	3	2	4	3
28	Jungle Babbler (<i>Turdoides-striata</i>)	4	5	4	3	4	3	5	3	5	5	4	3	6	5	5	4	3	5
29	Indian Robin (<i>Saxicoloides-fulicatus</i>)	2	2	1	2	1	—	2	2	1	—	—	1	1	2	1	1	2	1
30	Indian Chat (<i>Oenanthe-fusca</i>)	3	2	2	3	2	2	2	3	3	2	3	4	3	3	2	2	3	2
31	House Sparrow (<i>Passer-domesticus</i>)	9	9	8	9	7	7	9	9	8	9	8	7	9	9	7	9	8	9
32	Baya Weaver (<i>Ploceus-philippinus</i>)	2	1	1	3	3	2	4	2	4	3	4	3	3	2	1	1	1	1
33	Long Tailed Shrike (<i>Lanius-schach</i>)	1	—	—	—	2	1	2	1	2	1	2	2	1	—	—	1	—	1
34	Indian Silver Bill (<i>Euodice-malabarica</i>)	1	1	2	1	2	1	1	2	2	2	2	2	1	2	2	1	1	1
35	Green Bee Eater (<i>Merops-orientalis</i>)	8	8	9	9	8	5	9	8	8	8	5	2	3	3	7	9	8	7
36	Common Tailor Bird (<i>Orthotomus-sutorius</i>)	2	3	2	3	3	2	3	3	4	3	4	2	3	4	3	2	3	2
37	Ashy Prinia (<i>Prinia-socialis</i>)	3	3	4	3	4	2	3	2	3	2	3	3	2	2	3	2	3	2
38	Purple Sun Bird (<i>Cinnyris-asiaticus</i>)	1	2	2	1	2	2	1	1	3	2	1	1	1	2	2	1	1	1



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39	Iberian Grey Strike (<i>Lanius-meridionalis</i>)	–	1	1	–	–	–	1	1	1	–	1	1	2	1	1	–	1	–
40	Common Redstart (<i>Phoenicurus - phoenicurus</i>)	2	2	1	3	2	1	1	2	1	3	1	2	2	1	1	2	1	2
41	White Browed Wagtail (<i>Matacilla-maderaspatensis</i>)	2	2	1	2	3	2	3	1	1	2	2	3	3	1	1	2	1	2

V. RESULT

A total of 41 species were observed in the bird study conducted in the Bandhya area from June 2023 to November 2024. For the first time, the main focus is on this area to find out the actual number and biodiversity of birds seen in this area.

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