



DIVERSITY AND ABUNDANCE OF AVIAN FAUNA IN AND AROUND WADAD LAKE OF HINGOLI DISTRICT, MAHARASHTRA

Pradnya Ramchandra Mujmule* and B. S. Salve

Department of Zoology, Adarsh College, Hingoli 431513, Maharashtra, India

*Corresponding author E-mail: mujmulepradnya@gmail.com

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Abstract:

Wadad Lake, situated near Wadad village in Hingoli district of Maharashtra, represents an important freshwater ecosystem supporting diverse avifauna. The lake and its surrounding landscape comprise aquatic vegetation, grasslands, agricultural fields, herbs, shrubs, and trees, creating a favorable habitat for birds throughout the year. These varied habitats provide abundant food resources, nesting sites, and shelter, contributing to the ecological richness of the area. A two-year study recorded a total of 66 bird species belonging to 15 orders and 42 families. Among these, the order Passeriformes was found to be dominant. The findings indicate that Wadad Lake and its adjoining habitats support rich avian biodiversity and play a significant role in sustaining bird populations in the region.

Keywords: Avian Diversity, Wadad Lake, Freshwater Ecosystem, Passeriformes, Habitat Diversity.

Introduction

Wadad is a medium-sized village located in Hingoli taluka and district of Maharashtra, India, with a population of 1,018 as per the 2011 census. Situated near the Hingoli-Washim road, the region is primarily agrarian, with a literacy rate of 77.59%. The landscape is characterized by agricultural fields interspersed with freshwater bodies such as Wadad Lake, which provide suitable habitats for a wide variety of flora and fauna. These aquatic ecosystems, along with surrounding vegetation including grasses, shrubs, and trees, create ideal conditions for supporting rich avian biodiversity (1).

Birds are considered important ecological indicators as they respond quickly to environmental changes and reflect the overall health of ecosystems (2). Wetlands and associated agricultural landscapes offer feeding, nesting, and breeding grounds for both resident and migratory bird species (3). The presence of diverse bird species in such habitats highlights their ecological significance and the need for their conservation.

The present study aims not only to prepare a checklist of bird species found in and around Wadad Lake but also to document their occurrence and promote awareness regarding their conservation. Birds play a crucial role in maintaining ecological balance by contributing to pollination, seed dispersal, and pest control, thereby forming an integral part of ecosystem structure and function (4).

Material and Methods



Figure 1: Wadad Lake, Hingoli District, MH (India)

An extensive survey of avifauna was carried out from February 2024 to January 2026 at regular time intervals. Observations were conducted during the most active periods of birds, i.e., early morning and late evening, which are considered suitable for avifaunal studies (5).

Data were recorded during each survey from different habitat types, including aquatic zones, agricultural fields, grasslands, and surrounding vegetation. Field observations were carried out with the help of binoculars and digital cameras. Binoculars (10×50) were used for distant viewing, while photographic documentation was done using cameras such as Nikon D40 and Canon PowerShot SX50 HS and EOS 7D with a 150–500 mm Sigma lens (6).

Identification of bird species was carried out using standard field guides such as Salim Ali (7) and Grimmett *et al.* (8), along with verification through reliable online resources. The geographical features and imagery of the study area were obtained using Google Earth, and graphical representation of data was prepared using Microsoft Excel (6).

The recorded avian species were classified based on their residential status into Resident (R), Resident Migrant (RM), and Migrant (M), following standard ornithological classification methods (5).

Result and Discussion

A total of 66 species of birds belonging to 15 orders and 42 families were recorded from Wadad Lake and its surrounding areas (Table 1). This represents the first documented record of avian fauna from Wadad Lake in Hingoli district, Maharashtra, indicating a comparatively rich avian diversity in the region. The high diversity may be attributed to the availability of abundant food resources, particularly due to high fish production, and the presence of agriculturally productive land supported by sufficient water availability. Wetlands and agro-ecosystems are known to support diverse bird communities by providing feeding, nesting, and breeding habitats (1, 9). Some bird species visit the area during the winter season for breeding purposes, while the majority remain permanent residents due to the availability of food and suitable habitat conditions. Most of the recorded species were categorized as Resident (R), followed by Resident Migrant (RM), with very few Migrant (M) species. Among all orders, Passeriformes was found to be dominant, contributing 27 species out of the total 66 (9).

Wadad Lake exhibited significant quantitative variation in avifaunal composition. Among the 15 recorded orders, Passeriformes accounted for approximately 43% (Figure 2) of the total families (42) (Table 1). This order included families such as Alaudidae, Cisticolidae, Dicruridae, Corvidae, Estrildidae, Passeridae, Ploceidae, Leiothrichidae,

Laniidae, Sturnidae, Muscicapidae, Pycnonotidae, Motacillidae, Hirundinidae, Aegithinidae, Oriolidae, and Nectariniidae. The dominance of Passeriformes indicates the ecological suitability of the habitat, as this group is known to adapt well to diverse environmental conditions, especially in human-modified landscapes such as agricultural and wetland ecosystems (10,11).

Analysis of residential status revealed that out of 66 species, 65% were resident, 24% were resident migrants (RM), and 11% were migrants (M) (Figure 4). The higher proportion of resident species suggests that Wadad Lake provides stable environmental conditions and continuous availability of food and shelter, supporting long-term habitation of avifauna. Similar observations have been reported in other wetland ecosystems where resource availability and habitat heterogeneity influence bird diversity and distribution (11,12). Seasonal influx of migratory species further enhances biodiversity and indicates the ecological importance of such freshwater habitats at regional and global scales (12).

Table 1: Check list of Birds recording from Wadad Lake, Hingoli District

Order and Family	Common Name	Scientific Name	Migratory Status	Abundance
I. Ciconiformes				
1.Ardeidae	1. Grey Heron	<i>Ardea cinerea (Linnaeus, 1758)</i>	R	68
	2. Little Egret	<i>Egretta garzetta (Linnaeus, 1766)</i>	R	72
2.Ciconidae	3. Asian Open bill Stork	<i>Anastomus oscitans (Boddaert, 1783)</i>	M	38
II. Anseriformes				
3. Anatidae	4. Spot Billed Duck	<i>Anas poicillorhyncha (Forster, 1781)</i>	R	98
	5. Ruddy shelduck	<i>Tadorna ferruginea (Pallas, 1764)</i>	RM	35
	6. Bar-headed goose	<i>Anser indicus (Latham, 1790)</i>	M	75
	7. Mallard	<i>Anas platyrhynchos (Linnaeus, 1758)</i>	R	72
III. Gruiformes				
4. Rallidae	8. White breasted waterhen	<i>Amaurornis phoenicurus (Pennant, 1769)</i>	R	30
IV. Pelecaniformes				
5. Phalacrocoracidae	9. Little Cormorant	<i>Microcarbo niger (Vieillot, 1817)</i>	R	25
6. Threskiornithidae	10. Red-naped ibis	<i>Pseudibis papillosa (Temminck, 1824)</i>	R	55
7.Ardeidae	11. Black-crowned night heron	<i>Nycticorax nycticorax (Linnaeus, 1758)</i>	RM	20
	12. Purple heron	<i>Ardea purpurea Linnaeus, 1766</i>	R	24
V. Charadriiformes				
8. Recurvirostridae	13. Black Winged Stilt	<i>Himantopus himantopus (Linnaeus, 1758)</i>	RM	92
9. Charadriidae	14. Yellow Wattled Lapwing	<i>Vanellus malabaricus (Boddaert, 1783)</i>	R	102
	15. Red-wattled lapwing	<i>Vanellus indicus(Boddaert, 1783)</i>	R	98

	16. Little ringed plover	<i>Thinornis dubius</i> (Scopoli, 1786)	RM	68
10.Scolopacidae	17.Wood Sandpiper	<i>Tringa glareola</i> (Linnaeus, 1758)	M	24
11.Sternidae	18.River Tern	<i>Sterna aurantia</i> (Gray, JE, 1831)	M	27
12.Burhinidae	19. Great thick-knee	<i>Esacus recurvirostris</i> (Cuvier, 1829)	M	15
VI. Columbiformes				
13. Columbidae	20. Blue Rock Pigeon	<i>Columba livia</i> (Gmelin, JF, 1789)	R	45
	21. Yellow-footed green pigeon	<i>Treron phoenicopterus</i> (Latham, 1790)	RM	24
	22. Spotted dove	<i>Spilopelia chinensis</i> (Scopoli, 1786)	R	32
	23. Eurasian collared dove	<i>Streptopelia decaocto</i> (Frivaldszky, 1838)	R	42
VII. Psittaciformes				
14. Psittacidae	24. Rose Ringed Parakeet	<i>Psittacula krameri</i> (Scopoli, 1769)	R	50
VIII. Cuculiformes				
15.Cuculidae	25. Greater coucal	<i>Centropus sinensis</i> (Stephens, 1815)	R	77
	26. Common koel	<i>Eudynamys scolopacea</i> (Linnaeus, 1758)	R	56
IX. Coraciiformes				
16. Alcedinidae	27. Common Kingfisher	<i>Alcedo atthis</i> (Linnaeus, 1758)	R	102
	28. White-throated kingfisher	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)	R	110
17. Meropidae	29. Asian green bee-eater	<i>Merops orientalis</i> (Latham, 1801)	RM	104
	30. Blue tail Beater	<i>Merops phillippinus</i> (Linnaeus, 1767)	RM	70
18. Coraciidae	31. Indian roller	<i>Coracias benghalensis</i> (Linnaeus, 1758)	R	68
X. Passeriformes				
19. Alaudidae	32. Black crown sparrow lark	<i>Eremopterix nigriceps</i> (Gould, 1839)	RM	78
	33. Rufous-tailed lark	<i>Ammomanes phoenicura</i> (Franklin, 1831)	R	68
20. Cisticolidae	34. Common Tailor Bird	<i>Orthotomus sutorius</i> (Pennant, 1769)	R	88
21.Dicruridae	35.White Bellied Drongo	<i>Dicrurus caerulescens</i> (Linnaeus, 1758)	RM	12
	36. Black drongo	<i>Dicrurus macrocercus</i> Vieillot, 1817	R	78
22.Corvidae	37. House crow	<i>Corvus splendens</i> Vieillot, 1817	R	132

	38. Jungle crow	<i>Corvus macrorhynchos</i> Wagler, 1827	M	32
23. Estrildidae	39. Scaly-breasted munia	<i>Lonchura punctulata</i> (Linnaeus, 1758)	RM	45
24. Passeridae	40. House sparrow	<i>Passer domesticus</i> (Linnaeus, 1758)	R	166
25. Ploceidae	41. Baya weaver	<i>Ploceus philippinus</i> (Linnaeus, 1766)	R	105
26. Leiothrichidae	42. Jungle babbler	<i>Argya striata</i> (Dumont, 1823)	RM	42
27. Laniidae	43. Long tailed/Rufous-back Shrike	<i>Lanius schach</i> (Linnaeus, 1758)	R	48
	44. Bay-backed shrike	<i>Lanius vittatus</i> (Valenciennes, 1826)	R	58
28. Sturnidae	45. Brahminy Starling	<i>Sturnia pagodarum</i> (Gmelin, JF, 1789)	R	45
29. Muscicapidae	46. Magpie Robin	<i>Copsychus saularis</i> (Linnaeus, 1758)	R	68
	47. Pied bush chat	<i>Saxicola caprata</i> (Linnaeus, 1766)	R	72
30. Pycnonotidae	48. Red-Vented Bulbul	<i>Pycnonotus cafer</i> (Linnaeus, 1766)	R	88
31. Motacillidae	49. Citrine wagtail	<i>Motacilla citreola</i> (Pallas, 1776)	RM	26
	50. White browed wagtail	<i>Motacilla aderaspatensis</i> (Gmelin, JF, 1789)	RM	31
	51. Western Yellow Wagtail	<i>Motacilla flava</i> (Linnaeus, 1758)	R	45
	52. Paddy Field Pipit	<i>Anthus rufulu</i> (Vieillot, 1818)	RM	24
32. Hirundinidae	53. Dusky crag martin	<i>Ptyonoprogne concolor</i> (Sykes, 1832)	R	38
33. Aegithinidae	54. Common iora	<i>Aegithina tiphia</i> (Linnaeus, 1758)	R	22
34. Dicruridae	55. Black drongo	<i>Dicrurus macrocercus</i> (Vieillot, 1817)	R	55
35. Oriolidae	56. Indian golden oriole	<i>Oriolus kundoo</i> (Sykes, 1832)	R	21
36. Nectariniidae	57. Purple sunbird	<i>Cinnyris asiaticus</i> (Latham, 1790)	R	46
	58. Purple-rumped sunbird	<i>Leptocoma zeylonica</i> (Linnaeus, 1766)	R	38
XI. Piciformes				
37. Megalaimidae	59. Coppersmith barbet	<i>Psilopogon haemacephalus</i> (Statius Müller, 1776)	R	18
XII. Suliformes				
38. Anhingidae	60. Darter	<i>Pelecanus anhinga</i> Linnaeus, 1766	M	8
XIII. Accipitriformes				
39. Accipitridae	61. Shikra	<i>Tachyspiza badia</i> (Gmelin, JF, 1788)	R	56
	62. Brahminy kite	<i>Haliastur indus</i> (Boddaert, 1783)	R	48
	63. Black-shouldered kite	<i>Elanus axillaris</i> (Latham, 1801)	R	38
XIV. Bucerotiformes				
40. Upupidae	64. Eurasian hoopoe	<i>Upupa epops</i> (Linnaeus, 1758)	RM	12

41. Bucerotidae	65. Indian grey hornbill	<i>Ocyrceros birostris (Scopoli, 1786)</i>	R	32
XV. Charadriiformes				
42. Jacanidae	66. Bronze-winged jacana	<i>Metopidius indicus (Latham, 1790)</i>	RM	22

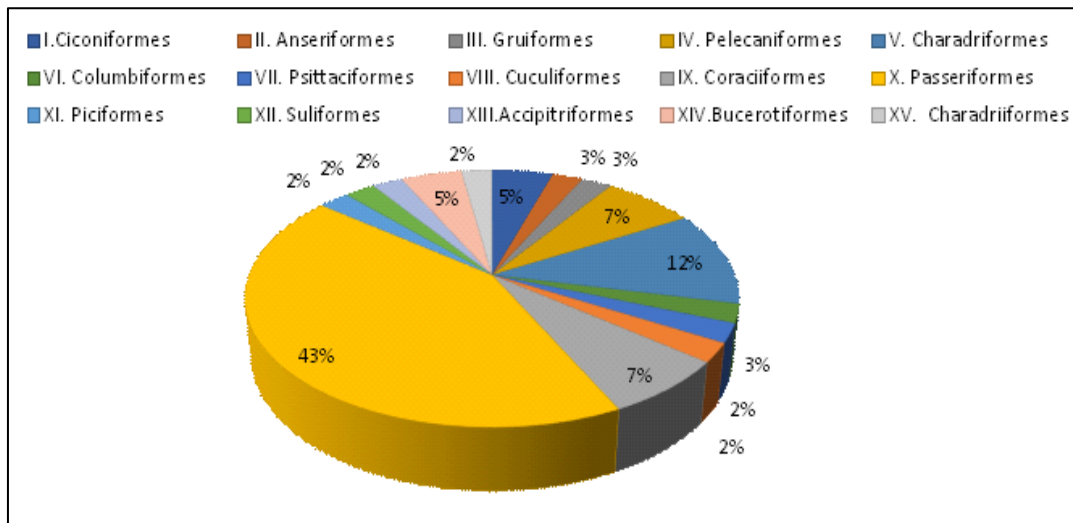


Figure 2: Percentage of families in different order of birds of Wadad Dam

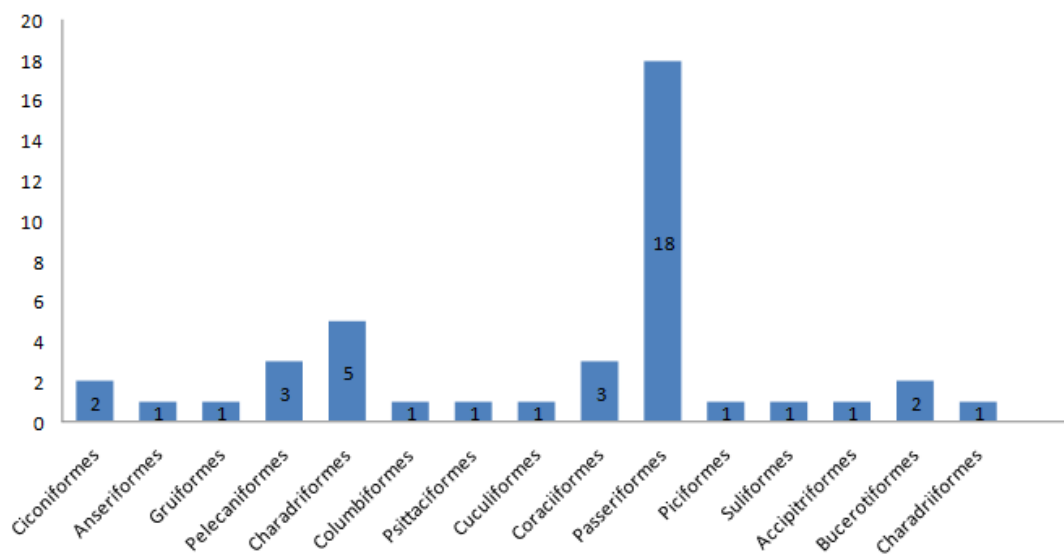


Figure 3: Number of families in different order of birds of Wadad Dam

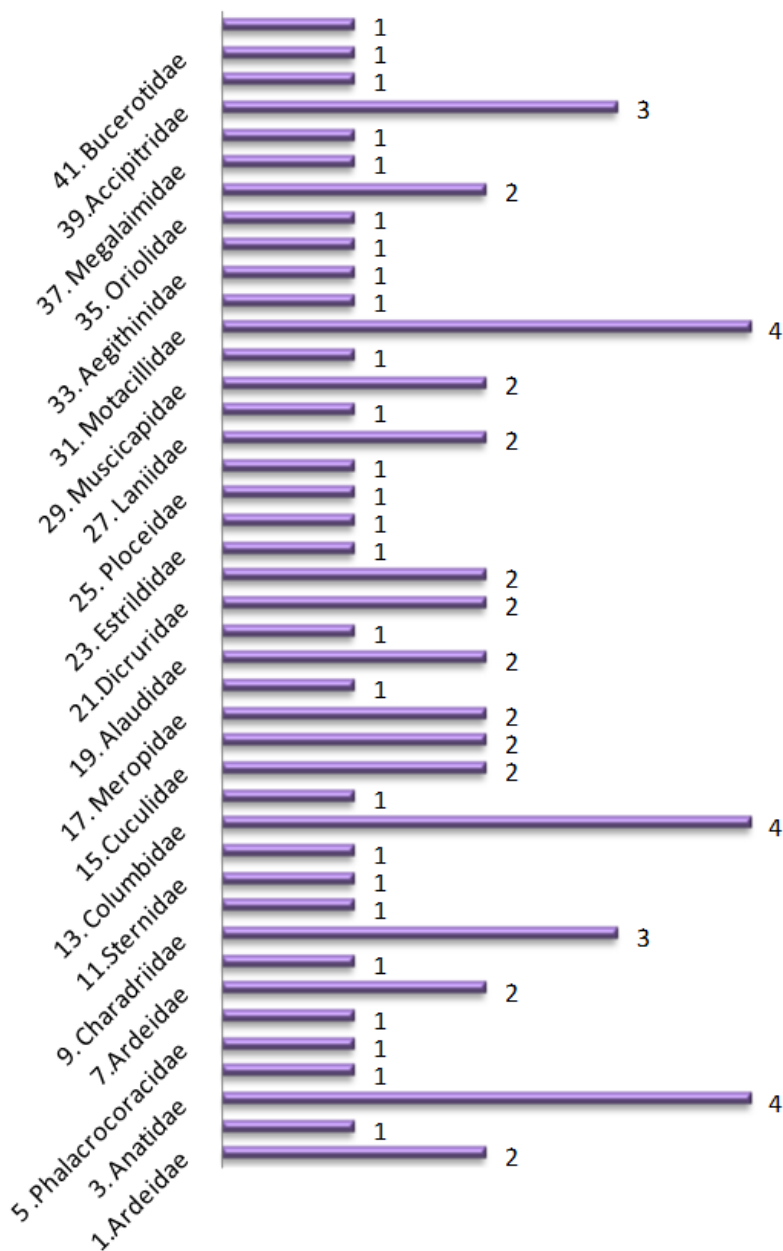


Figure 5: Family wise Species number of birds of Wadad Dam

Conclusion

The present study reveals that Wadad Lake supports rich avian diversity, indicating its ecological importance and healthy environmental conditions. The lake and its surrounding agricultural areas provide abundant food resources, including grains, insects, and aquatic organisms, along with suitable nesting and shelter habitats. The availability of good-quality water and a well-developed fish population further enhances the suitability of this ecosystem for birds. The presence of resident, resident migrant, and migratory species reflects habitat stability and seasonal ecological balance. Overall, Wadad Lake serves as an important habitat for bird conservation at regional levels, and its sustainable management and protection are essential to preserve this valuable biodiversity.

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