

AVIAN DIVERSITY OF DHRAFAD WATER RESERVOIR AND SURROUNDING AREA IN SARSAI VILLAGE, DIST. JUNAGADH (GUJARAT) INDIAC.K. VAISHNAV¹ AND *P.P. DODIA²

¹Botany Department,
²Zoology Department,
Sir P.P. Institute of Science,
BHAVNAGAR (GUJARAT) INDIA.
*Corresponding Author
Email : pravinsangdodia@gmail.com

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ABSTRACT

Dhrafad water reservoir is a fresh water reservoir (Dam). The area has good avian diversity as well as floral diversity. It provides good habitat to the water birds and plant species. Total 148 species of birds belonging to 53 families have been observed in the study area. Ninety six sp. are resident and breeding, 36 species are migratory, 10 species are resident, 03 species are residential, 02 species are residential and migratory, breeding and migratory and 01 species is resident and breeding in summer. Encroachments in the reservoir with drying of water for cropping and fishing are the threats to bird species.

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KEY WORDS : Avian diversity, Breeding, Migratory, Residential, Water reservoir,

Introduction

Dhrafad water reservoir is a fresh water artificially constructed reservoir (Dam) near Sarsai village (N:21° 34'N, E:70° 70'E) of Tehsil Visavadar, district Junagadh in Gujarat state, India. Gujarat State is located on the west coast of the sub-continent of India. Saurashtra is a region of arid to semi-arid climate. Dhrafad water reservoir was constructed in 1997, the reservoir is having 170 sq.km catchment areas and it covers 292 hectare. Drafadi, Fulsar, Madharadi and Popatadi are the main rivers of this reservoir. Dhrafad water reservoir is having capacity to store 9620 million cubic meter water. It provides water for irrigation to 2112 hectare agriculture land of the 07 nearby villages by canal and also provides drinking water to surrounding villages. The area shows three clear seasons in a year viz. monsoon, winter and summer. Rainfall is confined to the monsoon season only that usually

starts from first or last week of June and prevails upto September and October. Annual rainfall of Junagadh district was 952 mm (during 2013-2015), rainfall is erratic in its occurrence, duration and intensity in Visavadar. Tehsil annual rainfall was 708mm.

STUDY AREA:

The study area is very near to Gir forest (15 km.), Dhrafad water reservoir area 292 hectare and its surrounding area was considered for the study (Fig. 1).

Material and Methods

The birds were observed with the aid of 10 x 50 Celestron and 8 x 40 Nikon field binoculars and identified with the help of various field guides¹⁻⁴. The nomenclature was followed². The area was surveyed during May 2013 to January 2016 at regular intervals in all three seasons.

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TABLE -1 : List of birds found at Dhrafad water Reservoir Village Sarsai, District Junagadh.

S. No.	English Name	Scientific name and family name	Local Name	Residential Status
	Grebs	1. Podicipedidae		
1	Little Grebe	<i>Tachybaptus ruficollis</i>	Nani Dubaki	RB
	Pelicans	2. Pelecanidae		
2	Great White Pelican	<i>Pelicanus onocrotalus</i>	Gulabi Pen	RB,M
	Cormorants/Shags	3. Phalacrocoracidae		
3	Great Cormorant	<i>Phalacrocorex carbo</i>	Moto Kajiyu	RB
4	Little Cormorant	<i>Phalacrocorex niger</i>	Nano Kajiyu	RB
	Darters	4. Anhingidae		
5	Darter	<i>Anhinga melanogaster</i>	Sarp Griv	RB
	Hérons, Egrets & Bitterns	5. Ardeidae		
6	Grey Heron	<i>Ardea cinerea</i>	Kabut Bagalo	RB
7	Purple Heron	<i>Ardea purpurea</i>	Nadi Bagalo	RB
8	Indian Pond Heron	<i>Ardeola grayii</i>	Kaani Bagali	RB
9	Cattle Egret	<i>Bubulcus ibis</i>	Dhor Bagalo	RB
10	Large Egret	<i>Casmereodius albus</i>	Moto Dholo Bagalo	RB
11	Median Egret	<i>Mesophoyx intermedia</i>	Vachet Dholo Bagalo	RB
12	Little Egret	<i>Egretta garzetta</i>	Nano Dholo Bagalo	RB

	Stork	6. Ciconiidae		
13	Painted Stork	<i>Mycteria leucocephala</i>	Pili Chanch Dhonk	RB
14	Asian Open bill Stork	<i>Anastomus oscitans</i>	Fati Chanch Dhonk	RB
15	European White Stork	<i>Ciconia ciconia</i>	Safed Dhonk	M
	Ibises & Spoonbills	7. Threskiornithidae		
16	Black-Headed Ibis	<i>Threskiornis melanocephalus</i>	Safed Kankansar	RB
17	Black Ibis	<i>Pseudibis papillosa</i>	Kali Kankansar	RB
18	Glosy Ibis	<i>Plagadis falcinellus</i>	Nani Kankansar	RB,M
19	Euroasian Spoonbill	<i>Platalea leucorodia</i>	Chamcho	RB,M
	Swans,Gees,Ducks.	8. Anatidae		
20	Brahminy Shelduck	<i>Tadorna ferruginea</i>	Bhagavi Surkhab	M
21	Northern Pintail	<i>Anus acuta</i>	Singpar	M
22	Common Teal	<i>Anus crecca</i>	Nani Murghabi	M
23	Spot-billed Duck	<i>Anaspoecilorhyncha</i>	Tiliyali batak	RB
24	Garganey	<i>Anas querquedula</i>	Chetwa	M
25	Northern Shoveler	<i>Anas clypeata</i>	Gayano	M
26	Common Pochard	<i>Aythya ferina</i>	Rakhodi Karachiya	M
27	Comb Duck	<i>Sarkidiornis melanotos</i>	Nakato	RB
	Kites, Eagles, Buzzards,	9. Accipitridae		
28	Black Shoulder Kite	<i>Elanus caeruleus</i>	Kapasi	RB

29	Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	Madhiyo Baaj	RB
30	Black Kite	<i>Milvus migrans</i>	Samali	RB
31	Shikra	<i>Accipiter badius</i>	Shakaro	RB
32	Short-Toad Snake Eagle	<i>Circaetus gallicus</i>	Saap-Mar	RB
33	Crested Serpent Eagle	<i>Spilornis cheela</i>	Chotaliyo Sapmar	RB,M
	Osprey	10. Pandionidae		
34	Osprey	<i>Pandion haliaetus</i>	Matsya-Bhoj	M
	Pheasants, Partridges, Quils	11. Phasianidae		
35	Painted Francolin	<i>Francolinus pictus</i>	Taliyo tetar	RB
36	Grey Francolin	<i>Francolinus pondicerianus</i>	Tetar	RB
37	Common Quail	<i>Coturnix coturnix</i>	Moto Lavari	R,M
38	Indian Peafowl	<i>Pavo cristatus</i>	Mor-Dhel	RB
	Bottonquails	12. Turnicidae		
39	Common Bottonquail	<i>Turnix suscitator</i>	Rakhodi pag Bil Bater	R
	Cranes	13. Gruidae		
40	Common Crane	<i>Grus grus</i>	Kunj	M
41	Demoiselle Crane	<i>Grus virgo</i>	Karkaro	M
	Rails, Moorhens, Crakes, Coots	14. Rallidae		
42	White-Breasted Water hen	<i>Amaurornis phoenicurus</i>	Safed Chhati Santa kukadi	RB
43	Common Moorhen	<i>Gallinula chloropus</i>	Jal Murghi	RB

44	Purple Swamp hen	<i>Porphyrio porphyrio</i>	Nil Jal Murgho	RB
45	Common Coot	<i>Fulica atra</i>	Bhagatadu	RB,M
	Jacanas	15. Jacanidae		
46	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	Swet Pankh Jal Maanjar	RB
47	Bronze-Winged Jacana	<i>Metopidius indicus</i>	Kalo Jal Maanjar	RB
	Plover, Dotterels, Lapwings	16. Charadriidae		
48	White Tailed Lapwing	<i>Vanellus leucurus</i>	Swet Puchh Titodi	M
49	Red-Wattled Lapwing	<i>Vanellus indicus</i>	Titodi	RB
50	Yellow Wattled Lapwing	<i>Vanellus malabaricus</i>	Vagdau Titodi	RB
51	Grey Plover	<i>Pluvialis squatarola</i>	Moti Baatan	M
52	Little Ring Plover	<i>Charadrius dubius</i>	Kanthalavali Nani Dhongili	M
	Sandpiper, Stint, Snipes, Godwit, & Curlew	17. Scolopacidae		
53	Black-tailed Godwit	<i>Limosa limosa</i>	Moto Gadero	M
54	Common Redshank	<i>Tringa totanus</i>	Rata Pag	M
55	Marsh Sandpiper	<i>Tringa stagnatilis</i>	Nano Lilapag	M
56	Wood Sandpiper	<i>Tringa glareola</i>	Tapkili Tutawari	M
57	Common Sandpiper	<i>Actitis hypoleucos</i>	Nani Tutawari	M
58	Common Snipe	<i>Gallinago gallinago</i>	Pankha Punch Garkhod	M
59	Little Stint	<i>Calidris minuta</i>	Kala Pag Kichadiyo	M

	Avocet & Stilt	18. Recurvirostridae		
60	Black –winged Stilt	<i>Himantopus himantopus</i>	Gaj Pau	RB
61	Pied Avocet	<i>Recurvirostra avocetta</i>	Ulti Chanch	RB,M
	Cursor, Pranticoles	19. Glareolidae		
62	Indian Courser	<i>Corsorius coromandelicus</i>	Badami Rann Godhalo	RB
63	Small Pranicole	<i>Glareola lactea</i>	Nanu Tejpar	RB,M
	Terns	20. Laridae		
64	Whiskered Tern	<i>Chlidonias hybridus</i>	Kasmiri VaaBagali	R,M
65	Gull-Billed Tern	<i>Galocheidon nilotica</i>	Doli VaaBagali	M
66	Caspian Tern	<i>Sterna caspia</i>	Moti Vaa Bagali	RB,M
67	River Tern	<i>Sterna aurantia</i>	Kenchi Punchh VaaBagali	RB
68	Common Tern	<i>Sterna hirundo</i>	LadakhiVaa Bagali	M
	Sandgrouse	21. Pteroclididae		
69	Chestnut-Bellied Sand grouse	<i>Pterocles exustus</i>	Vagdau Batavado	RB
	Pigeons, Doves	22. Columbidae		
70	Yellow- Legged Green- Pigeon	<i>Treron phoenicoptera</i>	Hariyal	RB
71	Blue Rock Pigeon	<i>Columba livia</i>	Kabutar/Paarevu	RB
72	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Holo	RB
73	Laughing dove	<i>Streptopelia senegalensis</i>	Holi	RB
74	Spotted dove	<i>Streptopelia chinensis</i>	Taliyo holo	RB

75	Red Collared Dove	<i>Streptopelia tranquebarica</i>	Lotan Holo	RB
	Parakeets	23. Psittacidae		
76	Rose-Ringed Parakeet	<i>Psittacula krameri</i>	Popat / sudo	RB
	Cuckoos, Malkaohas, Coucals	24. Cuculidae		
77	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	Bapaiyo	RB
78	Asian Koel	<i>Eudynamys scolopacea</i>	Koyal	RB
79	Pied Cuckoo	<i>Clamator jacobinus</i>	Chatak	RB,S
80	Greater Coucal	<i>Centropus sinensis</i>	Ghunkiyo	RB
	Owls	25. Strigidae		
81	Spotted Owlet	<i>Athene brama</i>	Chibri	RB
	Nightjar	26. Caprimulgidae		
82	Common Indian Nightjar	<i>Caprimulgus asiaticus</i>	Nanu Dasharathiyu	RB
	Swifts	27. Apodidae		
83	House Swift	<i>Apus affinis</i>	Ababil	RB
	Kingfisher	28. Alcedinadae		
84	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	Kabaro Kalkaliyo	RB
85	Small Blue Kingfisher	<i>Alcedo atthis</i>	Nano kalkaliyo	RB
86	White-Throated Kingfisher	<i>Halcyon smyrnensis</i>	Safed Chhati Kakaliyo	RB
	Bee-eaters	29. Meropidae		
87	Blue -Cheeked Bee-eater	<i>Merops persicus</i>	Patarango	RB

88	Small Bee-eater	<i>Merops orientalis</i>	Nano Patarango	RB
	Roller	30. Coraciidae		
89	Indian roller	<i>Coracias benghalensis</i>	Chash	RB
	Hoopoes	31. Upupidae		
90	Common Hoopoe	<i>Upupa epops</i>	Ghanti Takano	RB,M
	Barbets	32. Capitonidae		
91	Coppersmith Barbet	<i>Megalaima haemacephala</i>	Tuk Tuk / Kansaro	RB
	Woodpeckers	33. Picidae		
92	Lesser Golden Backed Woodpecker	<i>Dinopium benghalense</i>	Soneri Lakkadkhod	RB
93	Yellow-Fronted pied Wood pecker	<i>Dendrocopoc mahattensis</i>	Kabaro Lakkadkhod	RB
94	Brown-Capped Pygmy Woodpecker	<i>Dendrocopos nanus</i>	Jinko Lakkadkhod	R
	Larks	34. Alaudidae		
95	Ashy Crown Sparrow Lark	<i>Eremopterix grisea</i>	Bhoy Chakali	RB
96	Common Crested Lark	<i>Galerida cristata</i>	Moto Chandul	RB
97	Greater short-toed Lark	<i>Calandrella brachydactyla</i>	Sad Chandul	M
	Swallows, Martins	35. Hirundinidae		
98	Common Swallow	<i>Hirundo rustica</i>	Shiyalu Tarodiyu	RB
99	Wire-Tailed Swallow	<i>Hirundo smithii</i>	Tarodiyu	RB
100	Red-Rumped Swallow	<i>Hirundo daurica</i>	Kechipuchh Tarodiyu	M

	Shrike	36. Laniidae		
101	Southern Grey Shrike	<i>Lanius meridionalis</i>	Dakshini rakhodi Latoro	RB
102	Rufous-Backed Shrike	<i>Lanius vittatus</i>	Pachanak latoro	RB
103	Long-tail shrike	<i>Lanius schach</i>	Lambipuchchh latoro	RB
	Orioles	37. Oriolidae		
104	Euroasian Golden Oriole	<i>Oriolus oriolus</i>	Pilak	RB
	Drongos	38. Dicruridae		
105	Black Drongo	<i>Dicrurus macrocercus</i>	Kalo Koshi	RB
106	White-Bellied Drongo	<i>Dicrurus caerulescens</i>	Safedpeto Koshi	RB,M
	Starlings, Mynas	39. Sturnidae		
107	Brahminy Starling	<i>Sturnus pagodarum</i>	Brahminy Kabar	RB
108	Rosy Starling	<i>Sturnus roseus</i>	Vaiyu	M
109	Common Myna	<i>Acridotheres tristis</i>	Kabar	RB
110	Bank Myna	<i>Acridotheres ginginianus</i>	Ghoda Kabar	RB
	Crows, Jays, Treepies	40. Corvidae		
111	Indian Treepie	<i>Dendrocitta vagabunda</i>	Kherkhatto	RB
112	House Crow	<i>Corvus splendens</i>	Kagado	RB
113	Jungle Crow	<i>Corvus macrorhynchos</i>	Girnari Kagado	RB
	Cuckoo-Shrike, Minivets, wood shrikes	41. Campephagidae		
114	Common Wood Shrike	<i>Tephrodornis pondicerianus</i>	Van Kashiyo	RB

115	Small Minivet	<i>Pericrocotus cinnamomeus</i>	Nano Rajalal	RB
	Ioras	42. Irenidae		
116	Common Iora	<i>Aegithina tiphia</i>	Shobigi	RB
	Bulbuls, Finchbills	43. Pycnonotidae		
117	Red-Vented Bulbul	<i>Pycnonotus cafer</i>	Hadiyo/ Bulbul	RB
	Babblers, Laughing Thrushes	44. Timaliinae		
118	Common Babbler	<i>Turdoides caudatus</i>	Thoriyu Lelu	RB
119	Large Grey Babbler	<i>Turdoides malcolmi</i>	Motu Lelu	RB
120	Jungle Babbler	<i>Turdoides striatus</i>	Van Lelu	RB
	Flycatchers	45. Musciapinae		
121	Red Throated Flycatcher	<i>Ficedula parva</i>	Chatki Makhimar	M
122	Tickell's Blue Flycatcher	<i>Cyornis tickelliae</i>	Adharang	RB
123	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	Badami Makhimar	M
	Prinias, Warbler	46. Sylviinae		
124	Asian-Paradise Flycatcher	<i>Terpsiphone paradise</i>	Dudhraj	RB
125	Plain Prinia	<i>Prinia inornata</i>	Panfadak futki	RB
126	Ashy Prinia	<i>Prinia socialis</i>	Fadak futki	RB
127	Common Tailor bird	<i>Orthotomus sutorius</i>	Darjido	RB
	Thrushes, Robins, Wheaters	47. Turdinae		
128	Oriental Magpie Robin	<i>Copsychus saularis</i>	Daiyad	RB

129	Stone Chat	<i>Saxicola torquata</i>	Mendiyo piddo	M
130	Pied Bush Chat	<i>Saxicola caprata</i>	Kabro Piddo	M
131	Isabelline Wheater	<i>Oenanthe isabellina</i>	Ujalo Piddo	M
132	Dessert Wheater	<i>Oenanthe deserti</i>	Shyam Kanth Ran Piddo	M
133	Chestnut Bellied Rock Thrush	<i>Monticola rufiventris</i>	Nil Kasturo	M
134	Indian Robin	<i>Saxicoloides fulicata</i>	Dev Chakali	RB
	Wagtails And pipits	48. Motacillidae		
135	Paddy field Pipit	<i>Anthus rufulus</i>	Vid Dhanchidi	R
136	Tawny Pipits	<i>Anthus campestris</i>	Vagdav dhan Chhidi	M
137	Yellow Wagtail	<i>Motacilla flava</i>	Pilakiyo	M
138	Grey Wagtail	<i>Motacilla cinerea</i>	Vanpilakiyo	M
139	White Wagtail	<i>Motacilla alba</i>	Diwali Ghodo	M
	Sunbirds, Spider hunters	49. Nectariniidae		
140	Purple Sunbird	<i>Nectarinia asiatica</i>	Shakkarkhoro	RB
141	Purple rumped Sunbird	<i>Nectarinia zeylonica</i>	Pachrangi Shakkarkhoro	RB
	White-Eyes	50. Zosteropidae		
142	Oriental White-eye	<i>Zosterops palpebrosus</i>	Swet nayana	RB
	Sparrow, Snow finches	51. Passerinae		
143	House Sparrow	<i>Passer domesticus</i>	Chakali	RB
144	Yellow Throated Sparrow	<i>Petrinia xanthocollis</i>	Raji	RB

	Weavers	52. Ploceinae		
145	Baya Weaver	<i>Ploceus philippinus</i>	Sugari	RB
146	Black Breasted Weaver	<i>Ploceus benghalensis</i>	Pansugari	RB
	Muniyas	53. Estrildidae		
147	White Throated Munia	<i>Lonchura malabarica</i>	Tapusiyu	RB
148	Spotted Munia	<i>Lonchura punctulata</i>	Taliyu Tapusiyu	RB

M = migratory, R = residential, RM- resident and migratory, RB = resident and breeding, RB, M = resident and breeding and migratory, RB, S = resident and breeding in summer.



Fig. 1 : Map of the Study area.

TABLE-2: List of Bird Group, family and number of species found at Dhrafad water Reservoir Village Sarsai, District Junagadh.

Sr. . No	Group	Family	No. of Sp.
1.	Grebs	Podicipedidae	1
2.	Pelicans	Pelecanidae	1
3.	Cormorants/Shags	Phalacrocoracidae	2
4.	Darters	Anhingidae	1
5.	Herons, Egrets & Bitterns	Ardeidae	7
6.	Stork	Ciconiidae	3
7.	Ibises & Spoonbills	Threskiornithidae	4
8.	Swans, Gees, Ducks	Anatidae	8
9.	Hawks, Eagles, Kites	Accipitridae	6
10.	Osprey	Pandionidae	1
11.	Peasants, Patridges, Quils	Phasianidae	4
12.	Buttonquail, Bustardquail	Turnicidae	1
13.	Cranes	Gruidae	2
14.	Rails, Moorhens, Crakes, Coots	Rallidae	4
15.	Jacanas	Jacanidae	2
16.	Plover, Dotterels, Lapwings	Charadriidae	5
17.	Sandpiper, Stint, Snipes, Godwit & Curlew	Scolopacidae	7
18.	Avocet & Stilt	Recurvirostridae	2
19.	Cursor, Pranticoles	Glareolidae	2
20.	Terns	Laridae	5
21.	Sandgrouse	Pteroclididae	1
22.	Pigeons, Doves	Columbidae	6
23.	Parakeets	Psittacidae	1
24.	Cuckoos, Malkaohas, Coucals	Cuculidae	4
25.	Owls	Srigidae	1
26.	Nightjar	Caprimulgidae	1
27.	Swifts	Apodidae	1
28.	Kingfisher	Alcedinadae	3

29.	Bee-eaters	Meropidae	2
30.	Roller	Coraciidae	1
31.	Hoopoes	Upupidae	1
32.	Barbets	Capitonidae	1
33.	Woodpeckers	Picidae	3
34.	Larks	Alaudidae	3
35.	Swallows, Martins	Hirundinidae	3
36.	Shrike	Laniidae	3
37.	Orioles	Oriolidae	1
38.	Drongos	Dicuridae	2
39.	Starlings, Mynas	Sturnidae	4
40.	Crows, Jays, Treepies	Corvidae	3
41.	Cuckoo-Shrike, Minivets, wood shrikes	Campephagidae	2
42.	Ioras	Irenidae	1
43.	Bulbuls, Finch bills	Pycnonotidae	1
44.	Babblers, Laughing Thrushes	Timaliinae	3
45.	Flycatchers	Musciapinae	3
46.	Prinias, Wrabblers	Sylviinae	4
47.	Thrushes, Robins, Wheaters	Turdinae	7
48.	Wagtails And pipits	Motacillidae	5
49.	Sunbirds, Spider hunters	Nectariniidae	2
50.	White-Eyes	Zosteropidae	1
51.	Sparrow, Snow Finches	Passernae	2
52.	Weavers	Ploceinae	2
53.	Munias	Estrildinae	2

Result and Discussion

During our study a total of 148 species of birds belonging to 53 families have been recorded from the area (Table-1). Among these birds 96 species are resident and breeding, 36 species are migratory, 10 species are resident, 03 species are residential, 02 species are residential and migratory, breeding and migratory and one sp. is resident and breeding in summer (Table-2). As the

area is having divergent floral diversity, numbers of resident and winter migrant bird species are found in the area. 96 resident and breeding bird species show that the habitat provides good foraging as well as breeding ground to the birds and the same way the habitat also provide feeding and shelter to the migratory birds. The birds were little disturbed due to cropping inside the dam area as the water is used for irrigation by canal and the land becomes

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open with decrease in the water. Fishing was permitted in the dam the fisherman used net with small mesh size so, they catch fingerling size fish also which cause food shortage for fish eater birds.

The reservoir is unprotected. Overall the aquatic and terrestrial area around the Dhrafad dam provides good habitats to the birds.

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