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Glimpse of avian diversity near Mithiviradi Village, Bhavnagar District, Gujarat, India

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ABSTRACT

Birds are very good biological indicators of environment health. Changes in various activity of bird can be used to check the long term effects of changes in habitat. The study was conducted to find out the diversity of birds in and around Mithiviradi village (21°30'06" N; 72°13'49"E) located in Talaja tehsil, Bhavnagar, Gujarat. The avian diversity was surveyed during Jan. 2016 to Jan. 2018. During the survey total 104 bird species were recorded out of this 78 species were residential and breeding, 15 species were migratory, and 09 were resident, breeding and migratory. This avian diversity represents 16 orders and 50 families.

KEYWORDS: Mithiviradi, Avian diversity, Bird species, Residential, Breeding, Migratory, Common

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INTRODUCTION

Bhavnagar District is situated at coastal region of Gulf of Khambhat. Mithiviradi village is 40 km away from Bhavnagar city. Mithiviradi village and their surrounding area were selected for the proposed Nuclear power station but at present it was postponed. The area is having various kind of habitat like agricultural, gauchar, forest patch, coastal area and temporary water body (seasonal river and check dam) all these provide suitable residence to diversity of birds and make the area rich in avian diversity. Birds play key role in pollination and seed dispersal [1]. India is having a total of 1263 species of birds which constituting about 12% of the world avifauna [2], whereas Gujarat has 574 bird species [3]. Rich avifaunal diversity of Gujarat is due to various types of habitats like, deciduous and thorn forests, grasslands, wetlands, marine intertidal areas, scrublands and saline deserts [4]. Bird diversity of Gujarat state and particularly of coastal region of Saurashtra has low threats. But some remote areas are still not surveyed with reference to status of their bird diversity. Mithiviradi is situated in Talaja tehsil 40km away from Bhavnagar District headquarter and 15km from Alang ship breaking yard near the coast of Gulf of Khambhat.

Study Area

The study was conducted to find out the diversity of birds in and around Mithiviradi village (21°30'06" N; 72°13'49"E)

located in Talaja tehsil, Bhavnagar, Gujarat, India. Area covers with the gauchar land, agriculture farm, wet lands and coastal part of gulf of Khambhat.

MATERIALS AND METHODS

The study was carried out during January 2016 to January 2018. The area was visited once in a month, hence, 4 times in one season. Data was collected by point count method for that some points are selected in all habitat. All observations were taken during morning (06:30hrs. to 09:30 hrs.) as well as evening (15:30 hrs. to 18:30 hrs.) when birds are found most active. 8X40 Nikon binocular was used for observation and Sony HX 400 camera was used for documentation. Identification of the bird species was confirmed by the book of Indian Birds [5], Birds of the Indian Subcontinent [6] and different volume of Raol [7-9]. For the status of bird we follow A Checklist of the Birds of Gujarat [2], [10]. Annual temperature of the study area ranges between 27° C and 42° C and average annual rainfall is 580 mm (Metrology station Bhavnagar).

RESULT AND DISCUSSION

During the study total 104 bird species were recorded out of this 78 species are residential and breeding, 15 species are migratory, 09 species are residential breeding and migratory, 01 species is resident and 01 species is passage migrant (Table 1). These bird species represents 16 orders and 50 families (Fig. 1). Result also

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Table 1: List of birds found near Mithiviradi village Gujarat, India.

Sr. no.	Order	Family	Common Name	Scientific Name	Res.-Status	Cons.Status
1	Podicipedi-formes	Podicipididae	Little Grebe	<i>Tachybaptus ruficollis</i>	RB,	Common
2	Pelicani-formes	Anhinginae	Darter	<i>Anhinga melanogaster</i>	RB,	Uncommon
3		Phalacrocoracidae	Great Cormorant	<i>Phalacrocorax carbo</i>	RB	Common
4			Little Cormorant	<i>Phalacrocorax niger</i>	RB	Common
5	Ciconii-formes	Ardeidae	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	RB	Common
6			Cattle Egret	<i>Bulbulcus ibis</i>	RB	Common
7			Great Egret	<i>Casmerodius albus</i>	RB	Common
8			Grey Heron	<i>Ardea cinerea</i>	RB and M	Common
9			Indian Pond Heron	<i>Ardeola grayii</i>	RB	Common
10			Intermediate Egret	<i>Mesophoyx intermedia</i>	RB	Common
11			Little Egret	<i>Egretta garzetta</i>	RB	Common
12			Purple Heron	<i>Ardea purpurea</i>	RB	Common
13			Western Reef Egret	<i>Egretta gularis</i>	RB and M	Common
14		Ciconidae	Painted Stork	<i>Mycteria leucocephala</i>	RB	Common
15		Threskiornithidae	Red-naped Ibis	<i>Pseudibis papillosa</i>	RB	Common
16			Black-headed Ibis	<i>Threskiornis melanocephalus</i>	RB	Common
17		Phoenicopteridae	Greater Flamingo	<i>Phoenicopterus roseus</i>	RB and M	Common
18		Anatidae	Knob-billed Duck	<i>Sarkidiornis melanotos</i>	RB	Common
19			Indian Spot-Billed Duck	<i>Anas poecilorhyncha</i>	RB	Common
20	Falconiformes	Accipitridae	Black Kite	<i>Milvus migrans</i>	RB	Common
21			Black-winged Kite	<i>Elanus caeruleus</i>	RB	Common
22			Brahminy Kite	<i>Haliastur indus</i>	RB	Common
23			Shikra	<i>Accipiter badius</i>	RB	Common
24			Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	RB and M	Common
25			Eurasian Marsh Harrier	<i>Circus aeruginosus</i>	M	Common
26		Falconidae	Common Kestrel	<i>Falco tinnunculus</i>	M	Common
27	Galliformes	Phasianidae	Grey Francolin	<i>Francolinus pondicerianus</i>	RB	Common
28			Painted Francolin	<i>Francolinus pictus</i>	RB	Common
29			Indian Peafowl	<i>Pavo cristatus</i>	RB	Common
30			Rain Quail	<i>Coturnix coromandelica</i>	RB and M	Common
31	Gruiformes	Gruidae	Demoiselle Crane	<i>Grus virgo</i>	M	Common
32		Rallidae	Eurasian Coot	<i>Fulica atra</i>	RB	Common
33			Purple Swampphen	<i>Porphyrio porphyrio</i>	RB	Common
34			White-Breasted Waterhen	<i>Amaurornis phoenicurus</i>	RB	Common
35	Charadrii- formes	Charadriidae	Red-Wattled Lapwing	<i>vanellus indicus</i>	RB	Common
36			Little Ringed Plover	<i>Charadrius dubius</i>	RB	Common
37		Turnicidae	Barred Buttonquail	<i>Turnix suscitator</i>	R	Common
38		Scolopacidae	Black-Tailed Godwit	<i>Limosa limosa</i>	M	Common
39			Common Sandpiper	<i>Actitis hypoleucos</i>	M	Common
40			Eurasian Curlew	<i>Numenius arquata</i>	M	Common
41			Ruff	<i>Philomachus pugnax</i>	M	Common
42		Burhinidae	Indian Thick-Knee	<i>Burhinus (oedicnemus) indicus</i>	RB	Common
43		Recurvirostridae	Black-Winged Stilt	<i>Himantopus himantopus</i>	RB	Common
44		Laridae	Caspian Gull	<i>Larus cachinnans</i>	M	Rare
45			River Tern	<i>Sterna aurantia</i>	RB	Common
46	Columbi- formes	Columbidae	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	RB	Common
47			Laughing Dove	<i>Streptopelia senegalensis</i>	RB	Common
48			Red-collared Dove	<i>Streptopelia tranquebarica</i>	RB	Common
49			Common Pigeon	<i>Columba livia</i>	RB	Common
50			Yellow-Footed Green Pigeon	<i>Treron phoenicopterus</i>	RB	Common to Uncommon
51	Psittaci-formes	Psittacidae	Rose-Ringed Parakeet	<i>Psittacula krameri</i>	RB	Common
52			Plum headed Parakeet	<i>Psittacula cyanocephala</i>	RB	Common
53	Cuculiformes	Cuculidae	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	RB and M	Common
54			Greater Coucal	<i>Centropus (sinensis) parroti</i>	RB	Common
55			Jacobin Cuckoo	<i>Clamator jacobinus</i>	RB and M	Common
56			Sirkeer Malkoha	<i>Taccocua leschenaultia</i>	RB	Uncommon to rare
57			Asian –Koel	<i>Eudynamis scolopaceus</i>	RB	Common
58	Strigiformes	Tytonidae	Barn Owl	<i>Tyto alba</i>	RB	Common to uncommon
59		Strigidae	Spotted Owlet	<i>Athene brama</i>	RB	Common
60	Caprimulgi-formes	Caprimulgidae	Indian Nightjar	<i>Caprimulgus asiaticus</i>	RB	Common
61	Apodiformes	Apodidae	Little Swift	<i>Apus affinis</i>	RB	Common
62	Coraciiformes	Alcedinidae	Common Kingfisher	<i>Alcedo atthis</i>	RB	Common
63			Pied Kingfisher	<i>Ceryle rudis</i>	RB	Common
64			White-Throated Kingfisher	<i>Halcyon smyrnensis</i>	RB	Common
65		Meropidae	Green Bee-Eater	<i>Merops orientalis</i>	RB	Common
66		Coraciidae	European Roller	<i>Coracias garrulus</i>	PM	Common to uncommon

(Contd...)

Table 1: (Continued)

Sr. no.	Order	Family	Common Name	Scientific Name	Res.-Status	Cons.Status
67	Piciformes		Indian Roller	<i>Coracias benghalensis</i>	RB	Common
68		Upupidae	Common Hoopoe	<i>Upupa epops</i>	M	Common
69		Capitonidae	Coppersmith Barbet	<i>Megalaima haemacephala</i>	RB	Common
70		Picidae	Lesser Golden back Woodpecker	<i>Dinopium benghalense</i>	RB	Common
71	Passeri-formes	Alaudidae	Ashy-Crowned Sparrow Lark	<i>Eremopterix griseus</i>	RB	Common
72			Crested Lark	<i>Galerida cristata</i>	RB	Common
73		Hirundinidae	Red-Rumped Swallow	<i>Hirundo daurica</i>	M	Common
74			Wire-Tailed Swallow	<i>Hirundo smithii</i>	RB	Common
75		Laniidae	Bay-backed Shrike	<i>Lanius vittatus</i>	RB	Common
76			Long-Tailed Shrike	<i>Lanius schach</i>	RB	Common
77		Oriolidae	Eurasian Golden Oriole	<i>Oriolus (oriolus) kundoo</i>	RB and M	Common
78		Dicruridae	Black Drongo	<i>Dicrurus macrocerus</i>	RB	Common
79		Sturnidae	Bank Myna	<i>Acridotheres ginginianus</i>	RB	Common
80			Common Myna	<i>Acridotheres tristis</i>	RB	Common
81			Rosy Starling	<i>Pastor roseus</i>	M	Common
82			Brahminy Starling	<i>Sturnia pagodarum</i>	RB	Common
83		Corvidae	House Crow	<i>Corvus splendens</i>	RB	Common
84			Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	RB	Common
85			Rufous Treepie	<i>Dendrocitta vagabunda</i>	RB	Common
86		Campephagidae	Small Minivet	<i>Pericrocotus cinnamomeus</i>	RB	Common
87		Irenidae	Common Iora	<i>Aegithina tiphia</i>	RB	Common
88		Pycnonotidae	Red-Vented Bulbul	<i>Pycnonotus cafer</i>	RB	Common
89		Timaliinae	Common Babbler	<i>Turdoides caudata</i>	RB	Common
90			Large Grey Babbler	<i>Turdoides malcolmi</i>	RB	Common
91		Monarchidae	Asian-Paradise Flycatcher	<i>Terpsiphone paradisi</i>	RB and M,	Common
92			Plain Prinia	<i>Prinia inornata</i>	RB	Common
93			Ashy Prinia	<i>Prinia socialis</i>	RB	Common
94			Common Tailor Bird	<i>Orthotomus sutorius</i>	RB	Common
95		Turdinae	Common Stonechat	<i>Saxicola torquatus</i>	M	Common
96			Indian Robin	<i>Saxicoloides fulicatus</i>	RB	Common
97			Oriental Magpie Robin	<i>Copsychus saularis</i>	RB	Common
98		Motacillidae	Citrine Wagtail	<i>Motacilla citreola</i>	M	Common
99			White Wagtail	<i>Motacilla alba</i>	M	Common
100			Yellow Wagtail	<i>Motacilla flava</i>	M	Common
101		Nectariniidae	Purple Sunbird	<i>Cinnyris asiaticus</i>	RB	Common
102		Passerinae	House Sparrow	<i>Passer domesticus</i>	RB	Common
103		Ploceinae	Baya Weaver	<i>Ploceus philippinus</i>	RB	Common
104		Estrildidae	Indian Silver bill	<i>Euodice malabarica</i>	RB	Common

RB = Resident Breeder, R = Resident, W = Winter Visitor, RB and W = Resident Breeder and winter visitor and PM = Passage Migrant

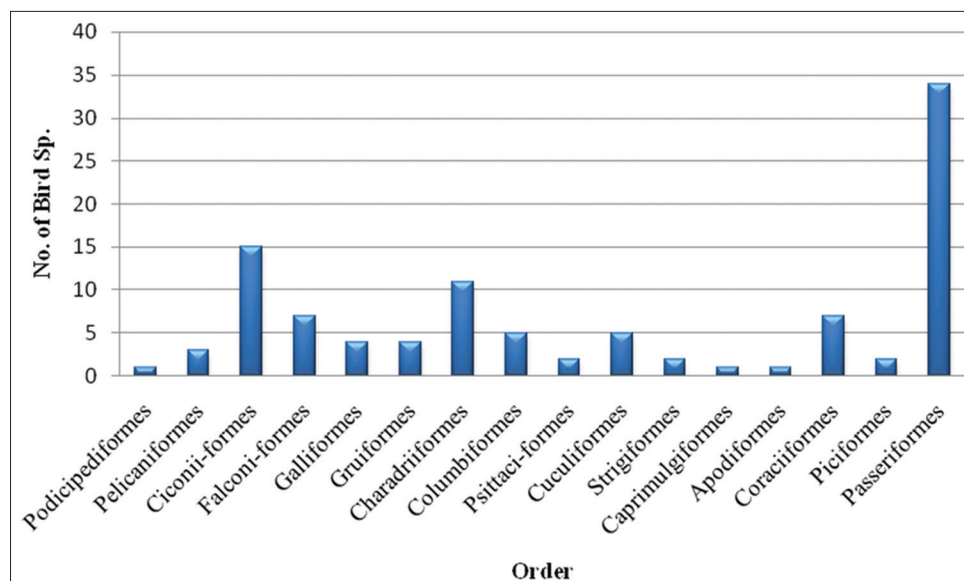


Figure 1: Graph representing relative diversity of observed bird species near Mithiviradi village

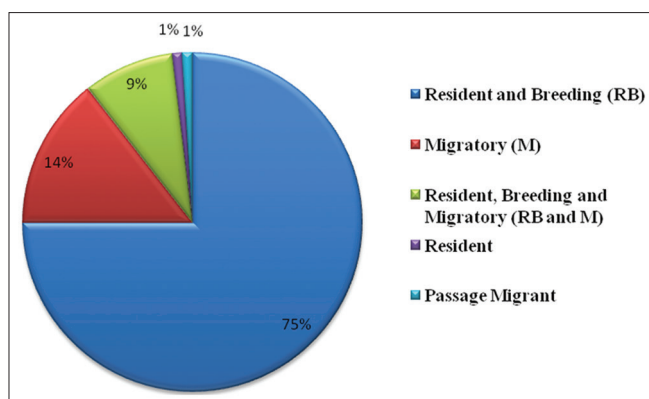


Figure 2: Chart shows the residential status of bird species found near Mithiviradi village

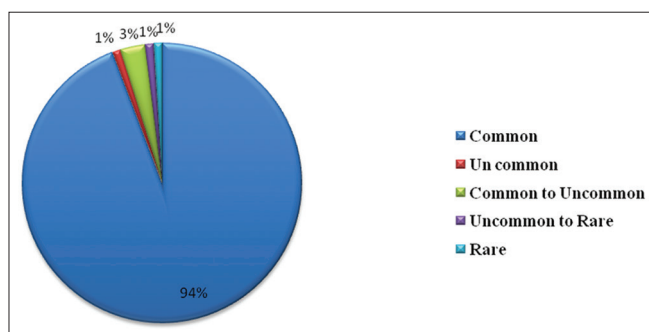


Figure 3: Chart shows the conservation status of bird species found near Mithiviradi village

indicates that 71 bird species was terrestrial and 33 bird species was observed aquatic. Maximum 34 bird species are belongs to order Passeriformes after that Ciconiiformes order having 15 bird species and three orders having only 01 bird species each. It was observed that Passeriformes order also having maximum 18 families, where as Charadriiformes order having 06 families, 07 bird order having only 01 family in the study area. Ardeidae family has maximum 09 species. Result shows that the study area harbours good avian diversity and the habitat is suitable for resident and breeding birds, birds observed in the area are common (98) in their conservational status. Out of 71 terrestrial bird species found in the study area 60 species are resident and breeding, so protection of the area is helpful for breeding and foraging of these resident birds (Fig. 2). The 104 bird species observed during the study belonging to 16 orders and 50 families constitute 8.12% species, 46.72% families and 69.56% orders of Indian avifaunal diversity (Fig. 3). When compared with bird diversity of Gujarat state that is 18.12% of species. Habitat of the area mainly supports Resident and breeding species of birds

but some migratory species also enjoy their visit. Baraiya and Dodia [11] recorded 100 bird species from 16 orders and 47 families near Devgana and their surrounding area in Bhavnagar district. 223 species from 61 deferent families of birds were recorded from Victoria park reserve forest area and Bortalav wetland of Bhavnagar city [12].

CONCLUSION

Present study indicates that the Mithiviradi and their surrounding area have the rich avifaunal diversity. Area also having the good vegetation covers which provided the food and shelter for the birds and other animal. Here we recorded total 104 bird species from different 50 families and 16 orders out of this 75% species were resident and breeding. Data represent the biological richness of the study area. Some migratory bird species are also enjoyed their visit during winter.

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