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

INTRODUCTION

Bhavnagar District is situated at coastal region of Gulf of Kambhat. 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 Kambhat.

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 Kambhat.

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 resident 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
### 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    | Podicipedidae     | Little Grebe                 | Tachybaptus ruficollis            | RB,         | Common      |
| 2       | Pelicaniformes       | Anhingidae        | Darter                       | Anhinga melanogaster              | RB,         | Uncommon    |
| 3       | Phalacrocoracidae    | Great Cormorant   | Podicipediformes             | Phalacrocorax carbo               | RB          | Common      |
| 4       | Little Cormorant     | Phalacrocorax     | Mesopophyx intermedia       | RB                                 | Common      |
| 5       | Ciconiiformes        | Ardeidae          | Black-crowned Night Heron    | Nycticorax nycticorax             | RB          | Common      |
| 6       | Anatidae             | Knob-billed Duck  | Anas poecilorhyncha          | RB                                 | Common      |
| 7       | Anhingidae           | Casmerodius albus | RB                             | Common                            |
| 8       | Grey Heron           | Ardea cinerea     | RB and M                      | Common                            |
| 9       | Indian Pond Heron    | Ardeola grayii    | RB                             | Common                            |
| 10      | Intermediate Egret   | Mesopophyx       | RB                             | Common                            |
| 11      | Little Egret         | Eretta gargarzeta | RB                             | Common                            |
| 12      | Purple Heron         | Ardea purpurea    | RB                             | Common                            |
| 13      | Western Reef Egret   | Eretta galaris    | RB and M                      | Common                            |
| 14      | Ciconiidae           | Painted Stork     | Mycteris leucocephala        | RB                                 | Common      |
| 15      | Threskiornithidae    | Red-naped Ibis    | Pseudibis papillosa           | RB                                 | Common      |
| 16      | Black-headed Ibis    | Threskiornis      | Phoenicopterus roseus         | RB and M                           |
| 17      | Phoenicopteridae     | Greater Flamingo | Phoenicopterus roseus         | RB and M                           |
| 18      | Anatidae             | Knob-billed Duck  | Anas poecilorhyncha           | RB                                 | Common      |
| 19      | Indian Spot-Billed Duck | Anas poecilorhyncha | RB                             | Common                            |
| 20      | Accipitridae         | Black Kite        | Milvus migrans                | RB                                 | Common      |
| 21      | Black-winged Kite    | Elanus caeruleus  | RB                             | Common                            |
| 22      | Brahminy Kite        | Haliastur indus   | RB                             | Common                            |
| 23      | Shikra               | Accipiter badius  | RB                             | Common                            |
| 24      | Oriental Honey Buzzard | Pernis pitithryncus | RB and M                      |
| 25      | Eurasian Marsh Harrier | Circus aeruginosus | M                                 | Common                            |
| 26      | Falconidae           | Common Kestrel    | Falco tinnunculus             | M                                  | Common      |
| 27      | Galliformes          | Grey Francolin    | Frantonius pondicerianus      | RB                                 | Common      |
| 28      | Phasianidae          | Francolinus       | RB                             | Common                            |
| 29      | Painted Francolin    | Francolinus       | RB                             | Common                            |
| 30      | Indian Peafowl       | Pavo cristatus    | RB                             | Common                            |
| 31      | Rain Quail           | Coturnix coromandelica | RB and M                      |
| 32      | Gruiformes           | Demoiselle Crane  | Grus virgo                     | M                                  | Common      |
| 33      | Charadriidae         | Eurasian Coot     | Fulicaatra                     | RB                                 | Common      |
| 34      | Charadriiformes      | Purple Swamphen   | Porphyrion porphyro            | RB                                 | Common      |
| 35      | White-Breasted Waterhen | Amaurornis phoenicurus | RB                             | Common                            |
| 36      | Charadriiformes      | Red-Wattled Lapwing | Vanellus indicus              | RB                                 | Common      |
| 37      | Leanidae             | Little Ringed Plover | Charadrius dubius             | RB                                 | Common      |
| 38      | Turnicidae           | Barred Buttonquail | Turnix suscillator            | R                                  | Common      |
| 39      | Scolopacidae         | Black-Tailed Godwit | Limosa limosa                 | M                                  | Common      |
| 40      | Gruiformes           | Eugenius          | Acitbis hypoleucus            | M                                  | Common      |
| 41      | Galiformes           | Eurasian Curlew   | Numenius arquata              | M                                  | Common      |
| 42      | Charadriiformes      | Ruff              | Philomachus pugnax            | M                                  | Common      |
| 43      | Burhinidae           | Indian Thick-Knee  | Burhinus (edicinemus) indicus  | RB                                 | Common      |
| 44      | Recurvirostridae     | Black-Winged Stilt | Himantopus himantopus         | RB                                 | Common      |
| 45      | Lariidae             | Caspian Gull      | Larus cachinnans              | M                                  | Rare        |
| 46      | Columbiformes        | River Tern        | Serna aurantia                | RB                                 | Common      |
| 47      | Columbidae           | Eurasian Collared Dove | Streptopelia decaocto      | RB                                 | Common      |
| 48      | Laughing Dove        | Streptopelia      | RB                             | Common                            |
| 49      | Common Sandpiper     | Streptopelia      | RB                             | Common                            |
| 50      | Common Pigeon        | Streptopelia      | RB                             | Common                            |
| 51      | Yellow-Footed Green Pigeon | Treron phoenicoterus | RB                             | Common to Uncommon    |
| 52      | Psittaciiformes      | Rose-Ringed Parakeet | Psittacula krameri           | RB                                 | Common      |
| 53      | Psittacidae          | Plum head Parakeet | Psittacula cyanoccephala      | RB                                 | Common      |
| 54      | Cuculiformes         | Common Hawk Cuckoo | Hierococcyx varius            | RB and M                           |
| 55      | Cuculidae            | Great coucal      | Centropus (sinensis) parroti  | RB                                 | Common      |
| 56      | Jacobin Cuckoo       | Clamator jacobinus| RB and M                      | Common                            |
| 57      | Sirkear Malikho      | Taccoca leschenaulita | RB                             | Uncommon                           |
| 58      | Asian – Kiel          | Eudynamys scolopes | RB                             | Ionmonoto rare                     |
| 59      | Strigiformes         | Barn Owl          | Tyto alba                     | RB                                 | Common      |
| 60      | Caprimuligiiformes   | Spotted Owlet     | Athene brama                  | RB                                 | Common      |
| 61      | Caprimulgidae        | Indian Nightjar   | Caprimuligus asiaticus        | RB                                 | Common      |
| 62      | Apodiformes          | Little Swift      | Apus affinis                  | RB                                 | Common      |
| 63      | Coraciiformes        | Common Kingfisher | Alcedo atthis                 | RB                                 | Common      |
| 64      | Alcedinidae          | Pied Kingfisher   | Cory a rudis                  | RB                                 | Common      |
| 65      | Meropidae            | White-Throated Kingfisher | Halcyon smyrrensis | RB                                 | Common      |
| 66      | Coraciidae           | European Roller   | Coracias garrulus            | PM                                 | Common to uncommon |
Table 1: (Continued)

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