

Avifauna of Kottuli wetland, Calicut, North Kerala

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Abstract

A study on the Diversity of Avifauna in Kottuli Wetland, Kerala was conducted from July 2014 to September 2015. During the study 94 species of Birds were Identified. The available data shows that water birds dominated in the area by population abundance. It is an ideal habitat for foraging and breeding of both terrestrial and water birds of resident species. A good population of migrant species also noticed. The presence of near threatened species Oriental white ibis, darter, painted stork point out by IUCN were also noticed, breeding pair of Black kite and Brahminy kite observed in the study site. The most abundant bird species were Black kites and little cormorants. The most abundant family were Ardeidae (8.5 %), followed by Alcedinidae, Rallidae and Accipitridae (4.25 %) respectively. The most abundant category were common resident type (77.65 %) and the least occurred category were common migrant type (2.12%).

Keywords: Kottuli wetland, near threatened, IUCN, green protocol, Calicut

Introduction

A noticeable knowledge about wetlands of Kerala given by (Nammassivayan and Venugopalan) (1989) ^[7], another study on birds of Kole wetlands in Thrissur conducted by Nameer (1993) ^[2] shows the importance of wetland conservation. Another study conducted by Biju Kumar (2006) ^[8], who prepared a check list of avifauna in Bharathapuzha river basin. The present study highlights the Avifaunal records of Kottuli wetlands in Kerala.

Study Area

Kottuli wetland is located in the Calicut District of North Kerala having 150 acres in area shows an 11.27° N/75.79° E. The wetland covers human habitation dominated by coconut plantations. The wetland covers number of canals, natural and artificial ponds, marshy areas, paddy fields. The dominant vegetation in this area includes *Anacardium occidentale*, *Casuarina equisetifolia*, *Ficus callosa*, *Ficus hispida*, *Flacourtia indica*, *Mangifera indica*, *Samanea saman*, *Nerium indicum*. The wetland is rich with species abundance of both flora and fauna. It is one among the 27 wetlands of National importance identified under National Wetland Conservation Programme. It is an ideal habitat for fish, Crustacean and Molluscs. Vertebrates covers, Frogs, Reptiles, birds and Mammals. A few species of mangroves identified from the study site. Black kites and Brahminy kites often used the twigs of these plants for nest making. The wetland situated in the heart of the city truly it acts as the lungs of the city considering the population of the town is 12 lakh (2012) survey, In this context Kottuli wetland demands the conservation as it is the largest "Eco patch" in the city and maintain ecological balance in the city. The wetland is linked to a canal (Canoli Canal) is known to be a man made one during 1848, having 11 Km long. Which connects two rivers Kallai and Korappuzha. This

canal is also not from the trouble of pollution. The presence of mangrove species such as *Excoecaria agallocha* (Milky mangroves), *Acanthus ilicifolius*, *Aegiceras corniculatum* and *avicennia* species were also observed close to the wetland area. Some mangrove associates also noticed in the study site. The present status of the wetland is not satisfactory, it is in the hand of real estate mafia and other construction contractors. So there is an urgent need to protect the core of the wetland. Mixing of municipal sewage and solid waste with the wetland water is one of the major threats to the ecosystem. Another serious issue noticed during the study period is infestation of weeds like *Salvinia* and *Eichhornia* species which will lead to eutrophication of the wetland. Most of the plant species were destroyed during the construction work of Sarovaram Bio-Park is caused to be another problem to roosting and nesting of birds.

Methodology

The survey was conducted randomly from July 2014 to September 2015. Study conducted with an interval of two days. Counting done especially in the morning and evening hours. Point counts of birds were made from specific areas (Bibby *et al.* 1993) ^[5]. 8x40 binoculars were used for watching the birds and standard books on Indian birds were used for identification. The observed birds categorized as seven types. Common Resident (CR), Local Migrant Common (LM; C) Winter Visitor Common (WV; C), Winter Visitor Uncommon (WV; UC), Near Threatened Migrant (NT), Common Migrant (CM), Resident Occasional (RO). The percentage of occurrence of each species calculated by using common percentage formula. Observed birds identified by field guides (Ali and Ripley 1984) ^[1], (Grimmet *et al.* 2011) ^[2], (Neelakantan *et al.* 2011) ^[3]. The checklist was prepared using standardized common and scientific names by Manakadan and

Pittie (2001) [4]

Result

A total of 94 species of birds belonging to 44 families were recorded during the entire survey, out of these (77.65%) were considered common resident type, as they were found frequently in the study area. Birds like Little Egret, Median Egret, Little Cormorant, Black Kites, Brahminy Kites were some of the most abundant birds in the study site. common local migrant type occurs (6.38%), Near Threatened birds like Oriental white Ibis, Painted stork, Darter were constitute (3.19%), winter visitors uncommon and common types were occurs (2.12%), (4.25%) respectively. Resident birds but occasionally seen were occurs (3.19%) and common migrants were observed (2.12%). Out of the 44 families Ardeidae (8.51%) were most abundant one (8) species, followed by Accipitridae, Rallidae, Alcedinidae (4.25%) respectively.

Other forty families shows below 4% of abundance.

Discussion

The kottuli wetland situated in the heart of the city. The approximate population of the Calicut city is above 12lakh (2012 Survey), truly the wetland act as a lung of the city, despite the wetland premises facing rapid urbanization, it preserving 94 species under 44 families. Rapid urbanization leads to the fragmentation of habitat. The Sarovaram bio park situated in the core of the wetland also creating deposition of non-degradable wastes. Mixing up of wetland water with polluted water from various sources will cause serious decrease in avifaunal diversity in future. Rapid multiplication of weed species especially Eichornia and Salvinia species causes eutrophication problems. Implementation of Green protocol around the wet land premises is a creative suggestion to preserve the wetland as such.

Table 1: Checklist of birds in Kottuli wetlands

Family (%) of occurrence	Common English Name	Scientific Name	Status
Phalacrocoracidae (3.19)	Little Cormorant	<i>Phalacrocorax niger</i>	CR
	Indian shag	<i>Phalacrocorax fuscicollis</i>	LM;C
	Darter	<i>Anhinga melanogastur</i>	NT;LM
Podicipitidae (1.06)	Little Grebe	<i>Tachybaptus ruficollis</i>	CR
Ardeidae (8.51)	Little Egret	<i>Egretta garzetta</i>	CR
	Great Egret	<i>Casmerodius albus</i>	CR
	Purple Heron	<i>Ardea purpurea</i>	CR
	Indian Pond Heron	<i>Ardeola grayii</i>	CR
	Grey Heron	<i>Ardea cinerea</i>	CR
	Cattle egret	<i>Bubulcus ibis</i>	CR
	Intermediat Egret	<i>Mesophoyx intermedia</i>	CR
	Black bittern	<i>Dupetor flavicollis</i>	CR
Ciconidae (3.19)	Asian openbill	<i>Anastomus oscitans</i>	CR
	European White- stork	<i>Ciconia ciconia</i>	WV;UC
	Painted stork	<i>Mycteria leucocephala</i>	NT;LM
Threskiornithidae (2.12)	Oriental white Ibis	<i>Threskiornis melanocephalus</i>	NT;LM
	Glossy ibis	<i>Plegadis falcinellus</i>	CR
Anatidae (2.12)	Lesser whistling Duck	<i>Dendrocygna javanica</i>	CR
	Spot-bill Duck	<i>Anas poecilorhyncha</i>	CR
Accipitridae (4.25)	Brahminy Kite	<i>Haliastur indus</i>	CR
	Black kite	<i>Mivus migrans</i>	CR
	Shikra	<i>Accipiter badius</i>	CR
	Marsh Harrier	<i>Circus aeruginosus</i>	CM
Jacanidae (2.12)	Brownze winged jacana	<i>Metopedius indicus</i>	CR
	Pheasant- tailed jacana	<i>Hydrophasianus chirurgus</i>	CR
Rallidae (4.25)	White breasted Waterhen	<i>Amauromis phoenicurus</i>	CR
	Common Moorhen	<i>Gallinula chloropus</i>	CR
	Purple Swamphen	<i>Porphyrio porphyrio</i>	CR
	Common Coot	<i>Fulica atra</i>	CR
Charadriidae (2.12)	Red wattled Lapwing	<i>Vanellus indicus</i>	CR
	Yello-wattled lapwing	<i>Vanellus malarbaricus</i>	CR
Columbidae (3.19)	Spotted dove	<i>Streptopelia chinensis</i>	CR
	Emerald Dove	<i>Chalcophaps indica</i>	CR
	Rock pigeon	<i>Columba livia</i>	CR
Strigidae (3.19)	Mottled wood owl	<i>Strix ocellata</i>	CR
	Barn owl	<i>Tyto alba</i>	CR
	Spotted Owlet	<i>Athene brama</i>	CR
Ploceidae (1.06)	House Sparrow	<i>Passer domesticus</i>	CR
Apodidae (1.06)	Asian Palm swift	<i>Cypsiurus balasiensis</i>	CR
Alcedinidae (4.25)	Stork billed Kingfisher	<i>Halcyon capensis</i>	CR
	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	CR
	Common King fisher	<i>Alcedo atthis</i>	CR
	Pied Kingfisher	<i>Ceryle rudis</i>	CR
Corvidae (3.19)	Large billed crow	<i>Corvus macrorhynchos</i>	CR

	Rufous tree pie	<i>Dendrocitta vagabunda</i>	CR
	House Crow	<i>Corvus splendens</i>	CR
Cuculidae (3.19)	Asian Koel	<i>Eudynamis scolopaceus</i>	CR
	Indian cuckoo	<i>Cuculus micropterus</i>	CR
	Pied Cuckoo	<i>Clamator jacobinus</i>	CR
Capitonidae (1.06)	White checked barbet	<i>Megalaima lineate</i>	R;O
Oriolidae (1.06)	Eurasian golden oriole	<i>Oriolus oriolus</i>	LM; C
Dicaeidae (1.06)	Thick billed flowerpecker	<i>Dicaeum agile</i>	CR
Picidae (1.06)	Black rumped flame back woodpecker	<i>Dinopium benghalense</i>	CR
Campephagidae (1.06)	Common wood shrike	<i>Tephrodornis pondicerianus</i>	CR
Pycnonotidae (2.12)	Red whiskered bulbul	<i>Pycnonotus jocosus</i>	CR
	Red vented bulbul	<i>Pycnonotus cafer</i>	CR
Turdinae (2.12)	Indian Robin	<i>Saxicoloides fulicata</i>	LM;C
	Oriental Magpie robin	<i>Copsychus saularis</i>	CR
Phasianidae (2.12)	Red spur fowl	<i>Galloperdix spadicea</i>	CR
	Indian peafowl	<i>Pavo cristatus</i>	CR
Sylviidae (3.19)	Plain Prinia	<i>Prinia inornata</i>	CR
	Ashy prinia	<i>Prinia socialis</i>	CR
	Common Tailor Bird	<i>Orthotomus sutorius</i>	CR
Charadriidae (2.12)	Little ring plover	<i>Charadrius dubius</i>	WV;C
	Kentish plover	<i>Charadrius alexandrinus</i>	WV;UC
Sturnidae (2.12)	Jungle Myna	<i>Acridotheres fuscus</i>	LM;C
	Common Myna	<i>Acridotheres tristis</i>	CR
Scolopacidae (2.12)	Common sandpiper	<i>Actitis hypoleucos</i>	WV;C
	Marsh sand piper	<i>Tringa stagnatilis</i>	WV;UC
Nectariniidae (2.12)	Loten's Sunbird	<i>Nectarinia lotenia</i>	LM;C
	Purple rumped sunbird	<i>Nectarinia zeylonica</i>	CR
Passerinae (1.06)	House sparrow	<i>Passer domesticus</i>	CR
Monarchinae (1.06)	Asian Paradise flycatcher	<i>Terpsiphone paradisi</i>	LM;C
Coraciidae (1.06)	Indian roller	<i>Coracias benghalensis</i>	CR
Bucerotidae (1.06)	Malabar grey hornbill	<i>Ocyroceros griseus</i>	CR
Estrildidae (1.06)	Black-headed Munia	<i>Lonchura malacca</i>	CR
Psittacidae (2.12)	Rose ringed parakeet	<i>Psittacula krameri</i>	CR
	Blue winged parakeet	<i>Psittacula columboides</i>	CR
Capitonidae (1.06)	Crimson-fronted barbet	<i>Megalaima rupricappila</i>	CR
Motacillidae (3.19)	Paddy-field Pipit	<i>Anthus novaeseelandiae</i>	CR
	White browed wag tail	<i>Motacilla maderaspatensis</i>	CR
	Yellow wagtail	<i>Motacilla flava</i>	CM
Timaliinae (2.12)	Yellow -billed babbler	<i>Turdoides affinis</i>	CR
	Jungle babbler	<i>Turdoides striatus</i>	CR
Falconidae (1.06)	Common kestrel	<i>Falco tinnunculus</i>	CR
Laridae (2.12)	River turn	<i>Sterna aurantia</i>	CR
	Whiskered tern	<i>Chlidonias hybridus</i>	WV;C
Dicruridae (3.19)	Greater racket tailed drongo	<i>Dicrurus paradiseus</i>	CR
	Ashy drongo	<i>Edolius leucophaeus</i>	R;O
	Black Drongo	<i>Dicrurus macrocercus</i>	CR
Nectariniidae	Purple sun bird	<i>Cinnyris asiaticus</i>	CR
Meropidae (2.12)	Small Green Bee-eater	<i>Merops orientalis</i>	R;O
	Blue-tailed Bee-eater	<i>Merops philippinus</i>	CR
	Pacific Golden Plover	<i>Pluvialis fulva</i>	WV;C



Fig 1



Fig 2



Fig 3



Fig 4

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