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RESEARCH ARTICLE

CHECKLIST OF BIRD SPECIES IN DHARMADAM ESTUARY IN KANNUR DISTRICT OF KERALA

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ABSTRACT

A total of 20 bird species belongs to 7 orders and 11 families were recorded in Dharmadam estuary in Kannur district. The record of migratory bird Eurasian Curlew and two species near threatened birds within a short period of study and this record indicate that Dharmadam estuary may be attracting more number of migratory bird species. A long-term study is needed to understand the seasonal variation of the bird species in Dharmadam estuary in Kannur district.

Keywords: Birds, Dharmadam estuary, Kannur, Migratory

1. INTRODUCTION

The Kerala state's hydrologic potential associated with the coastal system constitutes 41 west flowing rivers (all seasonal, 4 of them moderately large, and others only minor ones), and the associated vast lacustrine system along the coast. The river systems mostly drain into the backwaters and estuaries in the coastal plains before emptying into the sea. The closer proximity of the Western Ghats to the west coast and the consequent descending gradients of land cause the river run offs in spate during the rainy monsoon period [1]. As a result, the inflows from the uplands reaching the backwaters and estuaries discharge sizeable sediment load into the sea, with little deltaic accretion associated with the estuaries. Estuaries are complex ecosystem with many interacting organisms. Estuaries are important throughout the world for wildlife protections, recreations, pollution, and sediment control food prevention and food production [2]. According to Odum (1983) estuaries are semi-enclosed coastal water body that has a free connection with the open sea. The uniqueness of the different types of habitats in and near estuaries attracts both resident and migratory bird species. The present study was undertaken to prepare a detailed checklist of avifauna in Dharmadam estuary in Kerela.

2. STUDY AREA

Dharmadam estuary is situated between 11o 45’ 50” N-75o 28’41.3” E in Kannur district. The estuary has an area of 10.68 km^2 Dharmadam Island surrounded by the Anjarakkandy River on three sides, and the Arabian Sea on the fourth side. The habitat of the study sites are mainly mangrove, aquaculture lands and estuaries. The important habitat is scrubland, woodland, wetland the patches of scrubs with dense foliage, the wide exposure of mud flats, during low tide and the seashore and its sand dunes provide rich sources of food for resident as well as wintering species of birds. The mudflats in Dharmdam estuaries and the wide coastal belt with sand dunes rich in animal life can support a vast assemblage of marshy birds.

3. MATERIALS AND METHODS

The study was mainly based on direct observational methods. The whole area was surveyed by using various transit. Photographs of the birds were taken by using Nikon D3400 to support the further identification and birds were identified with the help of Birds of the Indian Subcontinent field guide [3]. The field surveys was conducted from January and February, 2019 performed in the morning (7a.m to 9a.m) and in the evening (4 p.m to 6 p.m) because birds are very active during this time due to peak activity of prey abundance. SOPMA (Self Optimized Prediction Method with Alignment) was used for the secondary structure prediction.

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Table 1. Checklist of bird species in Dharmadam estuary in Kannur district

Order	Family	Common Name	Scientific Name	Status
Coraciiformes	Alcedinidae	Blue-eared Kingfisher	*Alcedo meninting*	R
Gruiformes	Rallidae	White-breasted Waterhen	*Amaurornis phoenicurus*	R
Charadriiformes	Scolopacidae	Eurasian Curlew	*Numenius arquata**	M
		Ruddy Turnstone	*Arenaria interpres*	M
		Wood Sandpiper	*Tringa glareola*	M
		Temminck's Stint	*Calidris temminckii*	M
		Kentish Plover	*Charadrius alexandrinus*	M
Falconiformes	Accipitridae	Brahminy Kite	*Haliastur indus*	R
Suliformes	Phalacrocoracidae	Little Cormorant	*Microcarbo niger*	R
Pelecaniformes	Threskiornithidae	Oriental White Ibis	*Threskiornis melanocephalus**	R
	Ardeidae	Striated Heron	*Butorides striata*	R
		Western Reef Egret	*Egretta gularis*	M
		Intermediate Egret	*Ardea intermedia*	M
		Little Egret	*Egretta garzetta**	M
		Indian Pond Heron	*Ardeola grayii*	M
		Grey Heron	*Ardea cinerea*	M
		Black-crowned Night Heron	*Nycticorax nycticorax*	M
Passeriformes	Corvidae	House Crow	*Corvus splendens*	R
	Muscicapidae	Oriental Magpie Robin	*Copsychus saularis*	R
	Pycnonotidae	Red -whiskered Bulbul	*Pycnonotus jocosus*	R

Abrevations: R: Resident, M: Migratory
***Near Threatened**

3. RESULTS AND DISCUSSION

A total of 20 bird species were recorded and all birds species represents 7 orders and 11families. The maximum birds occurred the order Ciconiiformes followed by Charadriiformes Passeriformes and single species recorded in the rest of the orders. There are nine migratory birds species was recorded during the survey (Table.1). Among the bird species Eurasian curlew (*Numenius arquat*), Little egret (*Egretta garzetta*), and Oriental White Ibis (*Threskiornis melanocephalus*) are listed as Near Threatened category (IUCN). The Darter (Snake bird), *Anhinga rufa*were occasionally sighted from the area [1] not seen during our study. Bird species richness and community structure differed from region to region. Pearson [4], Karr [5] and Crowell [6] stated

that a species is found with greatest frequency and abundance in the habitats to which it is best adapted. Within a geographical area, species are not evenly distributed across all available habitats and tend to use some habitats more than the others [7]. Amongst all vertebrate faunal taxa, avian fauna shows maximum diversity. Kerala encompasses 516 species of birds [8]. Record of the more migratory bird species during the shortest period of our study indicates that presence of various habitats in Dharmadam estuary might attracting more number of both resident and migratory bird species. We recommend that long term ecological study might help to understand the species richness in varied habitats and to address the conservation measures in the Dhramadam estuary.

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