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RESEARCH ARTICLE

DIVERSITY, THREATS AND CHECKLIST OF WETLAND BIRDS IN AND AROUND THE MAHENDRATANAYA RIVR MOUTH, DAMODARAPURAM, SOMPETA MANDAL, SRIKAKULAM DISTRICT, ANDRAPRADESH, INDIA

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ABSTRACT

Mahendratanaya River Mouth area is Located in Damodarapuram, sompeta mandal of tekkali division on180 52′ 39.61″ N Latitude, 840 34′ 52.08″ E Longitude .The wetland bird survey was conducted in and around the Mahendratanaya river mouth is during the period of January 2014 to July 2014. 27 species of birds were recorded belongs to 14 families and 11 orders. The majority of the wetland birds observed during the present study were the resident and migratory birds. The resident birds are observed in most of the months of investigation period but the migratory birds were observed mostly in the limited months. My study reported that the freshwater habitats and sourroundings are good habitat for avian diversity. Wetlands are increasingly coming under pressure due to the fast growing human population and other factors. Vegetation is important factor affecting the diversity of avifauna. Conservation measures will be needed for protection of the wetlands and their biodiversity.

Key words: Diversity, Threats, Resident, Birds, Mahendratanaya, Vegetation, Checklist.

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INTRODUCTION

Wetlands are the ecotones or transitional zones between permanently aquatic and terrestrial ecosystems. Ramsar Convention has defined wetlands as "areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters". Wetlands are increasingly coming under pressure due to the fast growing human population, its needs and its associatory changes such as rapid urbanization, industrial and urban pollution, solid and liquid waste dumping, changing land use patterns, diverting and manipulating hydrological regimes and their wanton destruction for setting up various other structures and industries. Wetlands are important feeding and breeding grounds for wild life and the destruction of the same leads to loss of biodiversity. Wetlands are also valuable repositories of animal genetic pools. Birds are essential animal group of an ecosystem and maintain a tropic level. Therefore, detail study on avifauna and their ecology is important to protect them. Birds play prominent and diverse role in religion, and popular culture. They have their functional role in the ecosystem as potential pollinators and scavengers and are rightly called as bio-indicators.

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Wetlands provide dynamic resources and sources of livelihood to the people who are dependent on these resources. Wetlands are known to harbor a wide array of flora and fauna species, particularly birds that are endemic and migratory. Wetlands also function as flood control, drought prevention, and water quality protection. Wetlands also play an important role in nutrient cycling and ecological balance. A substantial chunk of rural population, in India and elsewhere, depend upon wetlands for various means of their livelihoods such as agriculture, irrigation, fisheries, medicinal and edible wild plants, fodder, and materials for thatch and for preparation of various key utility items. The decline in the wetlands, while directly impacting the very existence of the ecosystem, make ecological refugees of the ecosystem people depending on the wetlands for their life needs. Natural ecosystems have been overexploited and even destroyed by the rapidly increasing human population and industries. A number of endemic and restricted range species found in the region are facing threat to their existence. Results of this study will enable us to be aware of the ecological condition of environment, as birds are important ecological indicators responsive to changes in the environment.

MATERIALS AND METHODS

Study Area

Mahendratanaya River Mouth area (Fig. 1) is Located in Damodarapuram, sompeta mandal of tekkali division on18^0 52′

Fig. 1. Study area

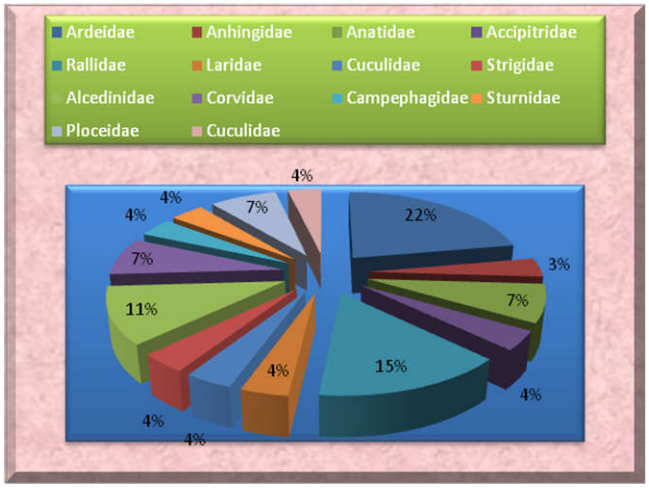


Fig. 1. Percentage composition of family wise number of species

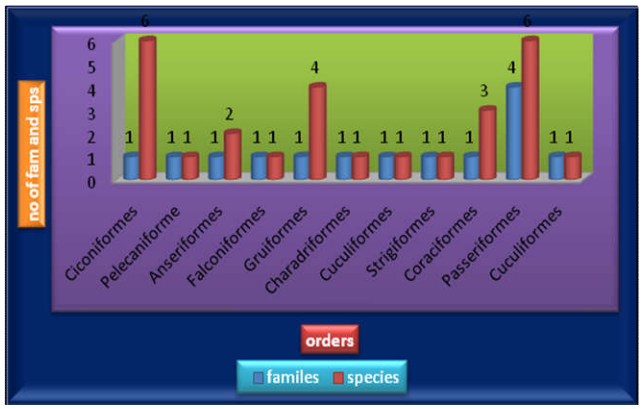
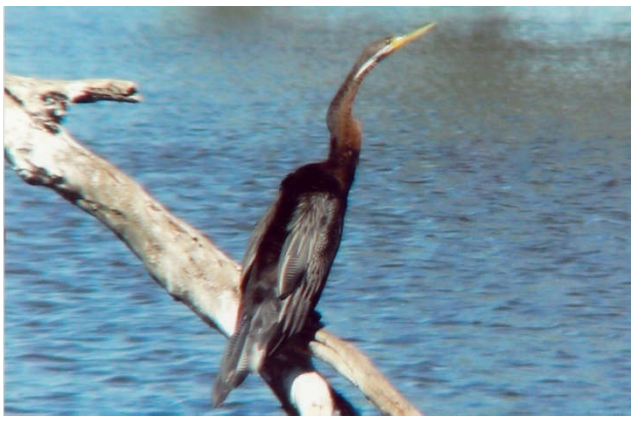


Fig. 2. Order wise number of families and species composition

39.61″ N Latitude, 84^0 34′ 52.08″ E Longitude. It is a Natural wetland. The river Mahendratanaya originates in the Eastern Ghats in the Gajapati district of Odisha state. It flows through Mandasa and Sompeta mandals of Srikakulam district and joins the Bay of Bengal at Damodarapuram. The study was carried out from January 2014 to July 2014. The birds were observed during the most active period in the day, mornings (6 to 9 AM) and late afternoons (4 to 7 PM). The transect method was used with an attempt to cover all the birds in the study area. The birds were observed with binoculars. Photographs were taken where ever necessary to identify birds accurately to the generic and species level.

Darter



Common coot

Birds sighted during the study period were categorized according to their status as residents (R) birds that have been known to breed in the study area itself and encountered during every visit, some birds sighted occasionally during specific season of study period, which are not resident of study area, are included as migrant birds (M). The birds were identified and classified on the basis of standard field guides by Ali and Ripley; Kazmierczak and Grimmett *et al*. Systematic list and status of the birds was constructed on the basis of each taxon according to Sarker and Sarker, Hossain *et al*.

RESULTS AND DISCUSSION

During the study period 27 species (Table. 1) of birds were recorded belongs to 14 families (Table. 2) and 11 orders (Table. 3). The families with number of bird species observed are Ardeidae with 6 species, Ralidae with 4, Corvidae 3 Anatidae and Ploceidae with 2, followed by remaining families. Out of all these birds observed at the site 22 species were Resident Eg; little Egret, Darter, White breasted water hen Common moorhen etc, (including Resident/ Local migratory), 3 species were limited to local migratory Eg; Common teal, Comb duck, Common coot and 2 more species were migratory Eg; Asian koel, Indian cuckoo (images: a,b). The resident birds are observed in most of the months of investigation period but the migratory birds were observed mostly in the winter months. In the present study, the population of migratory birds dominated at the reservoir in winter, because the climatic conditions of northern hemisphere are adverse to these birds during winter, especially in getting food and shelter.

Table 1. Checklist of birds at Mahendratanaya river mouth area

Common Name	Scientific Name	Family	Order	Abundance	Habitat	Status	Feeding Guild
Little Egret	*Egretta garzetta*	Ardeidae	Ciconiformes	C	WD F	R	Aqa Omn
Median Egret	*Mesophoyx intermedia*			UC	WD F	R/LM	Aqa Omn
Large Egret	*Casmerodius albus*			UC	W	R/LM	Aqa Omn
Cattle Egret	*Bubulcus ibis*			C	T F	R	Aqa Car
Indian Pond-Heron	*Ardeola grayii*			C	W F	R	Aqa Omn
Darter	*Anhinga melanogaster*	Anhingidae	Pelecaniforme	C	W	R/LM B	Pis
Yellow Bittern	*Ixobrychus sinensis*	Ardeidae	Ciconiformes	UC	W	R/LM	Aqa Omn
Common Teal	*Anas crecca*	Anatidae	Anseriformes	C	W F	LM	Aqa Omn
Comb Duck	*Sarkidiornia melanotos*			R	W F	LM	Aqa Omn
Black Kite	*Milvus migrans*	Accipitridae	Falconiformes	C	T	R	Sca/Car
White-Breasted Waterhen	*Amaurornis phoenicurus*	Rallidae	Gruiformes	C	W	R	Omn
Purple Moorhen	*Pulphyrio porphyria*			C	W	R/LM	Omn
Common Moorhen	*Gallinula chloropus*			C	W	R/LM	Omn
Common Coot	*Fulica atra*			C	W F	LM/WM	Omn
Brown Headed Gull	*Larus brunicephalus*	Laridae	Charadriformes	C	W F	R/WV	Pis Car
Indian Cuckoo	*Cuculus micropterus*	Cuculidae	Cuculiformes	C	T	M	Ins
Barn Owl	*Tyto alba*	Strigidae	Strigiformes	C	T	R/LM	Car PR
House Swift	*Apus affinis*	Alcedinidae	Coraciformes	C	WD F	R/LM	Ins
Small Blue Kingfisher	*Alcedo atthis*			C	WD	R/LM	Pis
White-breasted Kingfisher	*Halcyon smymensis*			C	WD	R	Aqa Pis
House Crow	*Corvus splendens*	Corvidae	Passeriformes	C	T F	R	Omn
Jungle Crow	*Corvus macrorhynchos*			C	T F	R	Omn
Common Wood Shrike	*Tephrodornis pondiceria*	Campephagidae		C	T	R	Ins
Common Myna	*Acridotherus tristia*	Sturnidae		C	T F	R	Omn
Baya Weaver	*Ploceus philippinus*	Ploceidae		UC	WD	R	Gra Ins
White Throated Munia	*Lonchura malabarica*			CF	WD/T SP	R	Gra
Asian Koel	*Eudynamys scolopacea*	Cuculidae	Cuculiformes	C	T	M	Ins

Table 2. Family wise no of species and percentage composition

Family	No of species	Percentage (%)
Ardeidae	6	22.22
Anhingidae	1	3.70
Anatidae	2	7.40
Accipitridae	1	3.70
Rallidae	4	14.81
Laridae	1	3.70
Cuculidae	1	3.70
Strigidae	1	3.70
Alcedinidae	3	11.11
Corvidae	2	7.40
Campephagidae	1	3.70
Sturnidae	1	3.70
Ploceidae	2	7.40
Cuculidae	1	3.70
Total	27	100%

Table 3. Order wise number of families and species recorded from study area

Order	No of families	No of species
Ciconiformes	1	6
Pelecaniforme	1	1
Anseriformes	1	2
Falconiformes	1	1
Gruiformes	1	4
Charadriformes	1	1
Cuculiformes	1	1
Strigiformes	1	1
Coraciformes	1	3
Passeriformes	4	6
Cuculiformes	1	1
Total	14	27

The majority of the wetland birds observed during the present study were the resident and local migratory birds. The occurrence of the migratory birds in the area indicates that the critical habitat is important for the organisms. Likewise, the occurrence of these birds in the area suggests that the area provides a favorable condition for the bird's breeding, feeding and nesting.

Studies have shown that birds migrate to different areas because of seasonal changes, availability of food and threat of predation . The other factors responsible for the decline in population of aquatic birds are due to extensive utilization of water for domestic purposes unlimited fishing, utilization of its marshy vegetation for grazing of livestock and decrease in rainfall. Water pollution due to agriculture run off, influx of sewage, and industrial waste from nearby industries are

additional threats to these reservoirs. Many species of birds either migrated to other places or gradually declined their population as nesting sites were destroyed. To save the avifauna, now-a-days reforestation is necessary to create some natural habitat like reservoir, gardens and lakes besides the human habitation to facilitate the foraging, sheltering and breeding for birds. Plantation of fruit trees also can attract many insectivorous birds to live there. Among urban avifauna most common one in the Asia are common crow, house sparrow, myna and egrets. Assessment of the status of the avifauna is necessary to conservation with proper planning. This is especially true in the light of documented impacts of habitat loss, fragmentation, degradation and other anthropogenic factors on avifauna across the globe.

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