

Diversity of Birds in Ousteri Wetland, Puducherry, India

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Abstract

Wetlands are very fragile and constitute treasure of biodiversity. The avifaunal diversity in Ousteri freshwater wetland, Puducherry, India, was studied to form a baseline data about several local and migratory bird species of this wetland. Birds are surveyed by direct sighting, calls and variable width line-transect method was carried out in December, 2009 to January, 2010. It resulted in total of 109 species of both migratory and local birds. Such unique diverse systems are under threats like reduction in water retention in this pond in summer, weed infestation; variations in food availability in different seasons, hunting, poaching and threat of predation on the breeding activity of birds affected the avifauna diversity in the study area.

Key words: Birds, diversity, threats, conservation

Introduction

Avifaunas are important for the ecosystem as they play various roles as scavengers, pollinators, predators of insect pest, bio-indicators of different kind of environment like urbanization and industrialization (Sharma, 1982; Bhattacharjee and Hazarika, 1985) human disturbance (Talukdar, 1997; Chakravarty, 1981) illumination (Sandhu and Dang, 1980). They are very sensitive indicators of pollution problems and function as early warning system (Gole, 1984; Becker, 2003).

Hussain *et al.* (1984) studied on Chilka lake in Orissa, Singh and Roy (1990) studied the ecology of birds of Kavar lake in Bihar, Sanjay (1993) studied about the ecology of birds at Kokkare-Bellur, Hosetti *et al.* (2001) researched on Ornitho-ecological aspects on Gudavi bird Sanctuary and recently Inac *et al.* (2008) studied the bird species of Kumasir lake. The above

avifaunal studies impress upon the need for the inventory of avifaunal diversity of other such habitats especially in terms of conservation and management aspects.

Ousteri wetland was one of the important rainfed fresh water wetland of Puducherry, it's been declared as significant wetlands of Asia among the other 93 wetlands by Asian Wetland Bureau and IUCN (1988). The lake also been declared as a wildlife sanctuary by Government of Puducherry. In terms of biodiversity documentation, no studies had been done so far in this wetland ecosystem. The major aim of this study is to give a baseline data about several local and migratory bird species of the wetland.

Materials and methods

Puducherry located on the Coramandal coast between 11°52' to 11°59'N and 79°45'

to 79°52'E and covers an area of 480 km². It is limited on the east by the Bay of Bengal and on the other three sides by the Cuddalore and Villupuram districts of Tamil Nadu state. Ousteri lake was located in towards north at a distance of 10 km (Puducherry to Villupuram via Thirukanur). Wetland (Fig. 1) covers an area of about 175 ha (a part in Tamil Nadu and Puducherry) with wide range of aquatic

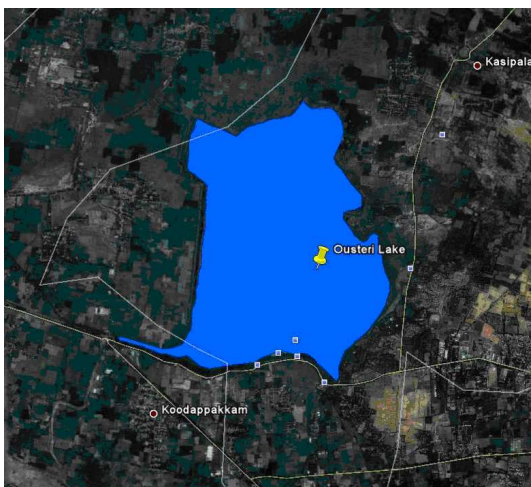


Figure 1. Map showing the Ousteri wetland, Puducherry, India

species and acts as a bird sanctuary. The vegetation ranges from small herbs to trees, which supports more migratory avifauna during their breeding season. Thus how it became an important tourist spot leading to more and more damage to such ecologically healthy system. Presently, this bird sanctuary supports a rich biodiversity in all aspects but lacks proper documentation. Such information was essential as the wetland serves as an important tourist spot apart from it as study area for some schools, college students and for many nature lovers and for conservation activities.

The study area experiences mean annual temperature of 30°C and mean annual rainfall about 1311-1172 mm. The mean number of annual rainy days is 55, the mean monthly temperature ranges from 21.3°-30.2°C. The climate is tropical dissymmetric with the bulk of the rainfall during northeast monsoon October-December (Indian Meteorological Department, Chennai).

Field surveys were carried out systematically during December, 2009 to January, 2010 by direct sighting, calls and variable width line-transect method (Bibby *et al.*, 2000; Sutherland, 2006) by walking along transects laid appropriately on the study area. The transects also traverse nearby agriculture land, sugarcane field, scrub jungle around the wetland. Opportunistic surveys in the nearby villages were also done to document a comprehensive checklist of birds of the area. The birds sighted during the period includes both water birds or and land birds. First phase of the bird survey is done during the major breeding season of birds, especially for the migratory birds, this data are the baseline can be used later in seasonal avifaunal diversity monitoring and their management.

Results and discussion

A total of 109 species of birds belonging to 96 genera and 46 families were recorded during the study (Table 1 and 2). Dominant families are Phylloscopidae and Accipitridae with 10 species followed by Pelecanidae with 7 species and 21 families represented by single species. As per the Red Data Book of IUCN, *Pelecanus philippensis*, *Mycteria leucocephala*, *Numenius arquata* and *Sterna acuticauda*

Table 1-Check list of Avian fauna of Ousteri wetland, Puducherry, India

Family	Common name	Zoological name
Podicipedidae	Little grebe or Dabchick	<i>Podiceps ruficollis</i> Pallas,1764
Pelecanidae	Grey pelical or Spottedbilled	<i>Pelecanus philippensis</i> Gmelin,1789
	Little cormorant	<i>Phalacrocorax niger</i> Vieillot,1817
	Cattle egret	<i>Bubulcus ibis</i> Linnaeus,1758
	Grey heron	<i>Ardea cinerea</i> Linnaeus,1758
	Great egret	<i>Ardea alba</i> Linnaeus,1758
	Little egret	<i>Egretta garzetta</i> Linnaeus,1766
	Paddy bird or pond heron	<i>Ardeola grayii</i> Sykes,1832
Ciconiidae	Asian Openbill stork	<i>Anastomus oscitans</i> Boddaert,1783
	Painted stork	<i>Mycteria leucocephala</i> Pennant,1769
	White stork	<i>Ciconia ciconia</i> Linnaeus,1758
Threskiornitidae	Spoonbill	<i>Platalea leucorodia</i> Linnaeus,1758
	White ibis	<i>Threskiornis aethiopicus</i> Latham,1790
Phoenicopteridae	Greater flamingo	<i>Phoenicopterus roseus</i> Pallas,1811
Anhimidae	Spotbill or Grey duck	<i>Anas poecilorhyncha</i> Forster,1781
Accipitridae	Blackwinged kite	<i>Elanus caeruleus</i> Desfontaines,1789
	Brahmini kite	<i>Haliastur indus</i> Boddaert,1783
	Common parish kite	<i>Milvus migrans</i> Boddaert,1783
	Kestrel	<i>Faiko tinnunculus</i> Linnaeus,1758
	Marsh harrier	<i>Circus aeruginosus</i> Linnaeus,1758
	Montagu's harrier	<i>Circus pygargus</i> Linnaeus,1758
	Shikra	<i>Accipiter badius</i> Gmelin,1788
	Sparrow hawk	<i>Accipiter nisus</i> Linnaeus,1758
	White scavengervulture or Pharaoh's chicken	<i>Neophron percnoptera</i> Linnaeus,1758
Phasianidae	Changeable hawk eagle	<i>Nisaetus cirrhatus</i> Gmelin,1788
	Grey partridge	<i>Francolinus pondicerianus</i> Gmelin,1789
Charadriidae	Common snipe or Fantail snipe	<i>Gallinago gallinago</i> Linnaeus,1758
	Little ringed plover	<i>Charadrius dubius</i> Scopoli,1786
	Little stint	<i>Calidris minuta</i> Leisler,1812
	Redwattled lapwing	<i>Vanellus indicus</i> Boddaert,1783
	Yellow wattled lapwing	<i>Vanellus malabaricus</i> Boddaert,1783
Scolopaciade	Common Sandpiper	<i>Actitis hypoleucos</i> Linnaeus,1758
	Curlew	<i>Numenius arquata</i> Linnaeus,1758
	Green sandpiper	<i>Tringa ochropus</i> Linnaeus,1758
	Marsh sandpiper	<i>Tringa stagnatilis</i> Bechstein,1803
	Wood sandpiper or Spotted sandpiper	<i>Tringa glareola</i> Linnaeus,1758
Recurvirostridae	Blackwinged stilt	<i>Himantopus himantopus</i> Linnaeus,1758
Laridae	Blackbellied tern	<i>Sterna acuticauda</i> Gray,1832
	Indian river tern	<i>Sterna aurantia</i> Gray,1831
	Indian whiskered tern	<i>Chlidonias hybrida</i> Pallas,1811
Columbidae	Blue rock pigeon	<i>Columba livia</i> Gmelin,1789
	Ring dove	<i>Streptopelia capicola</i> Sundevall,1857
	Spotted dove	<i>Streptopelia chinensis</i> Scopoli,1768
Psttaciidae	Roseringed parakeet	<i>Psittacula Krameri</i> Linnaeus,1766
Cuculiadae	Common hawk Cockoo or Brain feverbird	<i>Cuculus varius</i> Scopoli,1786
	Koel	<i>Eudynamys scolopacea</i> Horsfield,1840
	Pied crested cuckoo	<i>Clamator jacobinus</i> Franklin,1831
Tytonidae	Barn owl	<i>Tyto alba</i> Bonaparte,1850
Strigidae	Eagle owl or Indian greathorned owl	<i>Bubo bubo</i> Linnaeus,1758

	Screech owl	<i>Otus asio</i> Linnaeus, 1758
	Spotted owl	<i>Athene brama</i> Temminck, 1821
Caprimulgidae	Common Indian nightjar	<i>Caprimulgus asiaticus</i> Latham, 1790
Apodidae	House swift	<i>Apus affinis</i> Gray, 1830
	Palm swift	<i>Cypsiurus parvus</i> Lichtenstein, 1823
Alcedinidae	Pied kingfisher	<i>Ceryle rudis</i> Linnaeus, 1758
	Small blue kingfisher	<i>Alcedo atthis</i> Linnaeus, 1758
	White breasted kingfisher	<i>Halcyon smymensis</i> Linnaeus, 1758
Meropidae	Small green bee bee-eater	<i>Merops orientalis</i> Latham, 1802
	Blueril bee bee-eater	<i>Merops philippinus</i> Linnaeus, 1766
Coracidae	Indian roller or Blue jay	<i>Coracias benghalensis</i> Linnaeus, 1758
Upupidae	Hoopoe	<i>Upupa epops</i> Linnaeus, 1758
Capitonidae	Crimsonbreasted barbet or Coppersmith	<i>Megalaima haemacephala</i> Muller, 1776
Picidae	Goldenbacked woodpecker	<i>Dinopium benghalense</i> Linnaeus, 1758
Pittidae	Indian pitta	<i>Pitta brachyura</i> Linnaeus, 1766
Alaudidae	Ashycroun finch lark	<i>Eremopterix grisea</i> Scopoli, 1786
	Bush lark	<i>Mirafra assamica</i> Horsfield, 1840
	Indian small skylark	<i>Alauda gulgula</i> Franklin, 1831
Hirundinidae	Asian hous martin	<i>Delichon dasypus</i> Bonaparte, 1850
	Common swallo	<i>Hirundo rustica</i> Linnaeus, 1758
Motacillidae	Indian tree pipit	<i>Anthus hodgsoni</i> Richmond, 1907
	Large pied wagtail	<i>Motacilla maderaspatensis</i> Gmelin, 1789
	Paddyfield pipit or Indian pipit	<i>Anthus novaeseelandiae</i> Gmelin, 1789
	Yellow wagtail	<i>Motacilla flava</i> Linnaeus, 1758
Campephagidae	Blackheaded cuckooshrike	<i>Coracina melanoptera</i> Rüppell, 1839
	Large cuckoo shrine	<i>Coracina novaehollandiae</i> Gmelin, 1789
	Small minicet	<i>Pericrocotus cinnamomeus</i> Linnaeus, 1766
Picnonpidae	Redevented bulbul	<i>Pycnonotus cafer</i> Linnaeus, 1766
Irwnidae	Iora	<i>Aegithina tiphia</i> Linnaeus, 1758
Laniidae	Brown shrike	<i>Lanius cristatus</i> Linnaeus, 1758
	Common wood shrine	<i>Tephrodornis pondicerianus</i> Gmelin, 1789
	Gren shrine	<i>Lanius excubitor</i> Linnaeus, 1758
Sylviidae	Blyth's reed warbler	<i>Acrocephalus dumetorum</i> Blyth, 1849
Muscicapidae	Brown flycatcher	<i>Muscicapa dauurica</i> Pallas, 1811
Phylloscopidae	Brownlead warbler or Chiff chaff	<i>Phylloscopus collybita</i> Vieillot, 1817
	Common babbler	<i>Turdoides caudatus</i> , Dumont, 1823
	Indian robin	<i>Saxicoloides fulicata</i> Linnaeus, 1766
	Tawny-flanked Prinia	<i>Prinia subflava</i> Gmelin, 1789
	Lesserwhite throat	<i>Sylvia curruca</i> Linnaeus, 1758
	Magpie robin	<i>Copsychus saularis</i> Linnaeus, 1758
	Paradise flycatcher	<i>Terpsiphone paradisi</i> Linnaeus, 1758
	Spotted babbler	<i>Pellorneum ruficeps</i> Swainson, 1832
	Tailor bird	<i>Orthotomus sutorius</i> Pennant, 1769
	Whiteheaded babbler	<i>Turdoides affinis</i> Jerdon, 1845
Dicaeidae	Tickell's Flowerpecker	<i>Dicaeum erythrorhynchos</i> Latham, 1790
Nectariniidae	Little spider hunter	<i>Arachnothera longirostra</i> Latham, 1790
	Purplerumped sunbird	<i>Nectarinia zeylonica</i> Linnaeus, 1766
Prloceidae	Purple sunbird	<i>Nectarinia asiatica</i> Latham, 1790
	House sparrow	<i>Passer domesticus</i> Linnaeus, 1758
Sturnidae	Brahimini muna or blackheaded myna	<i>Sturnus pagodarum</i> Gmelin, 1789

	Indian myna	<i>Acridotheres tristis</i> Linnaeus,1766
Oriolidae	Golder oriole	<i>Oriolus oriolus</i> Linnaeus,1758
Dicruridae	Fork-tailed Drongo	<i>Dicrurus adsimilis</i> Bechstein,1794
Corvidae	House crow	<i>Corvus splendens</i> Vieillot,1817
	Jungle crow	<i>Corvus macrorhynchos</i> Wagler,1827
	Ravens	<i>Corvus corax</i> Linnaeus,1758
	Tree pie	<i>Dendrocitta vagabunda</i> Latham,1790
Estrildidae	Black headed munia	<i>Lonchura malacca</i> Linnaeus,1758
Rallidae	Eurasian hoot	<i>Fulica atra</i> Linnaeus,1758
Pycnonotidae	White throated bulbul	<i>Alphoixus flaveolus</i> Gould,1836

Table 2. List of total families with their respective genera and species number

Family	Genera	Species
Podicipedidae	1	1
Pelecanidae	6	7
Ciconiidae	3	3
Threskiornitidae	2	2
Phoenicopteridae	1	1
Anhimidae	1	1
Accipitridae	8	10
Phasianidae	1	1
Charadriidae	4	5
Scolopaciade	3	5
Recurvirostriidae	1	1
Laridae	2	3
Columbidae	2	3
Psttaciade	1	1
Cuculiade	3	3
Tytonidae	1	1
Strigidae	3	3
Caprimulfisae	1	1
Apodidae	2	2
Alcedinidae	3	3
Meropidae	2	2
Coraciidae	1	1
Upupisae	1	1
Capitonidae	1	1
Picidae	1	1
Pittidae	1	1
Alaudidae	3	3
Hirundinidae	2	2
Motacillidae	3	4
Campephagidae	2	3
Picnonpidae	1	1
Irwnidae	1	1
Laniidae	2	3
Sylviidae	1	1
Muscicapidae	1	1
Phylloscopidae	10	10
Dicaeidae	1	1

Nectariniidae	2	3
Prloceidae	1	1
Sturnidae	2	2
Oriolisae	1	1
Dicruridae	1	1
Corvidae	2	4
Rallidae	1	1
Pycnonotidae	1	1
Estrildidae	1	1

are near threatened species and *Neophron percnopterus* as endangered species, remaining all other species are found to be under least concern category were found during this survey.

This Ousteri wetland has been a main source of water for recharging the surrounding wells, bore wells, agriculture fields and industries around it. It is a vulnerable pond harboring plenty of resident and migratory birds. This wetland are under serious threats due to habitat loss, habitat degradation, paddy cultivation, sugarcane cultivation, casuarinas cultivation and extensive reed collection for thatching roofing, poaching birds, frequent reed fire and cutting trees are amongst threats from the locals. All this activities are resulting in loss of avifaunal diversity of the lake ecosystem (Alexandar, 2010).

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