



Short Communication

Avian diversity of Zor Island, Shrivardhan in Raigad District of Maharashtra, India

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Abstract

Mangrove forest being one of the most productive ecosystems of the world, provides shelter and feeding grounds to variety of organisms including avian diversity. Zor Island, Shrivardhan shows rich mangrove diversity and the ecosystem is occupied by variety of resident as well as migratory birds. Avian diversity in and around Zor Island, Shrivardhan was studied for a period of one year from September 2014 to October 2015. Total 54 species of birds belonging to 10 orders and 26 families were recorded during whole course of study. Out of the 54 recorded species, order Passeriformes comprised of 27.7%, 24.07% to the order Charadriiformes, 12.9% to the order Pelecaniformes, 12.6% to the order Coraciiformes, 7.4% for Accipitriformes, 3.7% each for Cuculiformes, Psittaciformes, Suliformes and Columbiformes and 1.8% for Gruiformes. Birds of order Passeriformes have dominated the study area and are represented by 11 families followed by the order Charadriiformes with 4 families. In current state the ecological conditions of mangroves in Zor Island support average avifaunal diversity. Due to lack of previous studies and limited data on avifaunal diversity of the study area, this study can form a foundation for further studies and research in future.

Keywords: Productive ecosystem, migratory, mangroves, Zor Island, Shrivardhan.

Introduction

More than 300 species from India have been recorded earlier from mangroves area in which large number of species are migratory¹. The mangrove ecosystem has a low floristic diversity² but due to higher availability of food and shelter, mangroves possess rich variety of avifauna³. As compared to areas like salt marshes, mudflats and beaches, mangroves harbour a great variety of bird life⁴. Amongst vertebrate faunal taxa avifauna shows maximum diversity. In India there are about 1263 species of birds and they cover over 12 percent of bird population of the world⁵.

State of Maharashtra has been endowed with 568 species of birds coming under 20 orders, 83 families and 272 genera which include residents, migrants, vagrants and passage dwellers⁶. Every particular species of birds dwells in a particular habitat in their respective geographical range. Birds are a major indicators of environmental standard in any given ecosystem⁷. The mangrove ecosystem and vegetation has provided perfect conditions for feeding, breeding and roosting of resident as well as passage migrant aquatic birds⁸.

It was recorded that the birds were exposed to food in abundance when there was low tide. It was during this time, maximum avian diversity was recorded.

Methodology

Zor Island (Lat. 18°02'22" N and Long. 73°01'52" E) is an island in Shrivardhan taluka in Raigad district of Maharashtra in India. Shrivardhan has mountain ranges towards the north, Arabian Sea in the west, Shrivardhan Dande Koliwada Creek in the east. Inventorying bird diversity and density was made during September 2014 to October 2015. Periodic observation of species of birds was carried out in the Mangroves of Zor Island, Shrivardhan Creek.

Each month two visits were made to the sites. The birds were recorded using point count method, Digital record was made using camera.

Results and discussion

The study area of Zor Island, is lined by mangroves. Five numbers of species of mangroves are recorded from the creek area and 3 species of mangrove associated species are also recorded. The habitat is dominated by *Avecinnia marina*. *Rhizophora sp.* also contributes to the mangrove ecosystem of study area.

Total 54 species belonging to 10 orders and 26 families were recorded in the present study (Table-1). Birds are categorised as Residents, Local Migrants and Migrant species of birds.

Passeriformes (27.7%) form the largest avian portion in the recorded species diversity comprising of 15 bird species and 12 families. Whereas Charadriiformes (24.07%) form the second largest avian order of the investigated area with 13 bird species followed by order Pelecaniformes (12.6%).

Local Migrants are lesser in number with 5 species than Regional migrants which have 14 species. The Resident birds are a majority in the study area with 35 species. According to Figure-1, birds are categorised as Common (C), Uncommon (UC) and Rare(R) where Common birds are dominant with 43 species followed by Uncommon birds with species and Rare birds with species (Figure-2).

The order Passeriformes are a majority order of birds with 27.77% followed by order Charadriiformes with 24.07%. Pelecaniformes make 14.81% of total species of birds, Coraciiformes make 9.25% of birds. The order Accipitriformes make 7.40% of total species of birds. The orders Cuculiformes, Psittaciformes, Columbiformes and Suliformes make 3.70% each. Finally, the order Gruiformes make 1.85% of total bird species (Figure-3).

Even after economic liberalization, fortunately this area isn't subjected to industrialization and urbanization to a great extent. Biodiversity and community structures are important factors acknowledged for better functioning of ecosystem. Since birds are bio-indicators, monitoring their species density is the key for assessing damage to the system and management.

Table-1: Checklist of Avifauna from Shrivardhan Creek.

Order	Family	Common Name	Scientific Name	Abundance Status	Migratory Status
Coraciiformes	Alcedinidae	Common Kingfisher	<i>Alcedo atthis</i>	UC	R
		Lesser Pied Kingfisher	<i>Ceryle rudis</i>	R*	LM
		White Throated Kingfisher	<i>Halcyon smyrnensis</i>	C	R
	Coraciidae	Indian Roller	<i>Coracias benghalensis</i>	R*	R
	Meropidae	Green Bee-eater	<i>Merops orientalis</i>	C	R
Columbiformes	Columbidae	Blue Rock Pigeon	<i>Columba livia</i>	C	R
		Spotted Dove	<i>Spilopelia chinensis</i>	C	R
Cuculiformes	Cuculidae	Asian Koel	<i>Eudynamys scolopaceus</i>	C	R
		Greater Coucal	<i>Centropus sinensis</i>	C	R
Psittaciformes	Psittaculidae	Rose-ringed parakeet	<i>Psittacula krameri</i>	C	R
		Alexandrine parakeet	<i>Psittacula eupatria</i>	C	R
Gruiformes	Rallidae	White Breasted Water hen	<i>Amaurornis phoenicurus</i>	C	R
Pelecaniformes	Ardeidae	Pond Heron	<i>Ardeola grayii</i>	C	R
		Black crowned night heron	<i>Nycticorax nycticorax</i>	C	R
		Grey Heron	<i>Ardea cinerea</i>	C	R
		Cattle Egret	<i>Bubulcus ibis</i>	C	R
		Western Reef Egret	<i>Egretta gularis</i>	C	R
		Great Egret	<i>Ardea alba</i>	C	R
Suliformes	Phalacrocoracidae	Little Cormorants	<i>Microcarbo niger</i>	C	R
		Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	C	R
	Threskiornithidae	Black headed Ibis	<i>Threskiornis melanocephalus</i>	C	LM

Order	Family	Common Name	Scientific Name	Abundance Status	Migratory Status
Charadriiformes	Scolopaciidae	Common Sandpiper	<i>Actitis hypoleucos</i>	C	RM
		Broadbilled sandpiper	<i>Limicola falcinellus</i>	UC	RM
		Eurasian curlew	<i>Numenius arquata</i>	C	RM
		Black tailed godwit	<i>Limosa limosa</i>	C	RM
		Little stint	<i>Calidris minuta</i>	C	RM
		Common redshank	<i>Tringa totanus</i>	C	RM
	Sternidae	Gull billed tern	<i>Gelochelidon nilotica</i>	C	RM
		Common tern	<i>Sterna hirundo</i>	C	RM
	Charadriidae	Ring plover	<i>Charadrius hiaticula</i>	C	RM
		Kentish plover	<i>Charadrius alexandrinus</i>	R*	RM
		Red wattled lapwing	<i>Vanellus indicus</i>	C	R
	Laridae	Brown headed gull	<i>Chroicocephalus brunnicephalus</i>	C	RM
Black headed gull		<i>Chroicocephalus ridibundus</i>	C	RM	
Accipitriformes	Accipitridae	Black Kite	<i>Milvus migrans</i>	C	R
		Brahminy Kite	<i>Haliastur indus</i>	C	LM
		Shikra	<i>Accipiter badius</i>	UC	LM
		White bellied sea eagle	<i>Haliaeetus leucogaster</i>	R*	LM
Passeriformes	Strunidae	Indian myna	<i>Acridotheres tristis</i>	C	R
	Hirundinidae	Barn swallow	<i>Hirundo rustica</i>	C	RM
	Corvidae	House crow	<i>Corvus splendens</i>	C	R
		Jungle crow	<i>Corvus macrorhynchos</i>	C	R
	Nectarinidae	Purple rumped sunbird	<i>Leptocoma zeylonica</i>	C	R
		Purple sunbird	<i>Cinnyris asiaticus</i>	UC	R
	Muscicapidae	India robin	<i>Saxicoloides fulicatus</i>	C	R
		Oriental magpie robin	<i>Copsychus saularis</i>	C	R
	Dicruridae	Black drongo	<i>Dicrurus macrocercus</i>	C	R
	Pycnonotidae	Red whiskered bulbul	<i>Pycnonotus jocosus</i>	C	R
		Red vented bulbul	<i>Pycnonotus cafer</i>	C	R
	Motacillidae	Yellow wagtail	<i>Motacilla flava</i>	UC	RM
	Passeridae	House sparrow	<i>Passer domesticus</i>	C	R
	Rhipiduridae	White throated fantail	<i>Rhipidura albicollis</i>	R*	R
Laniidae	Long tailed shrike	<i>Lanius schach</i>	UC	R	

Note: C – Common, RM – Regional Migrant, UC - Uncommon, R - Resident, R*-Rare, LM – Local Migrant.

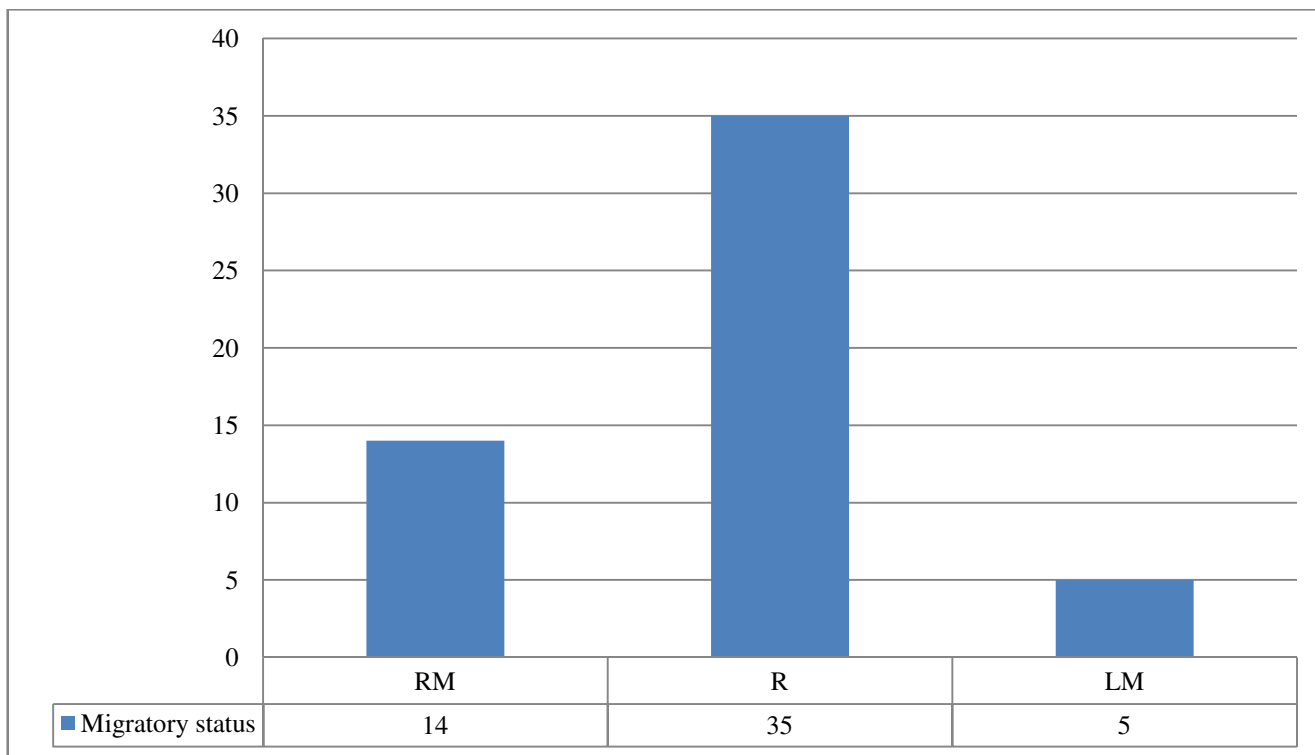


Figure-1: Migratory Status.

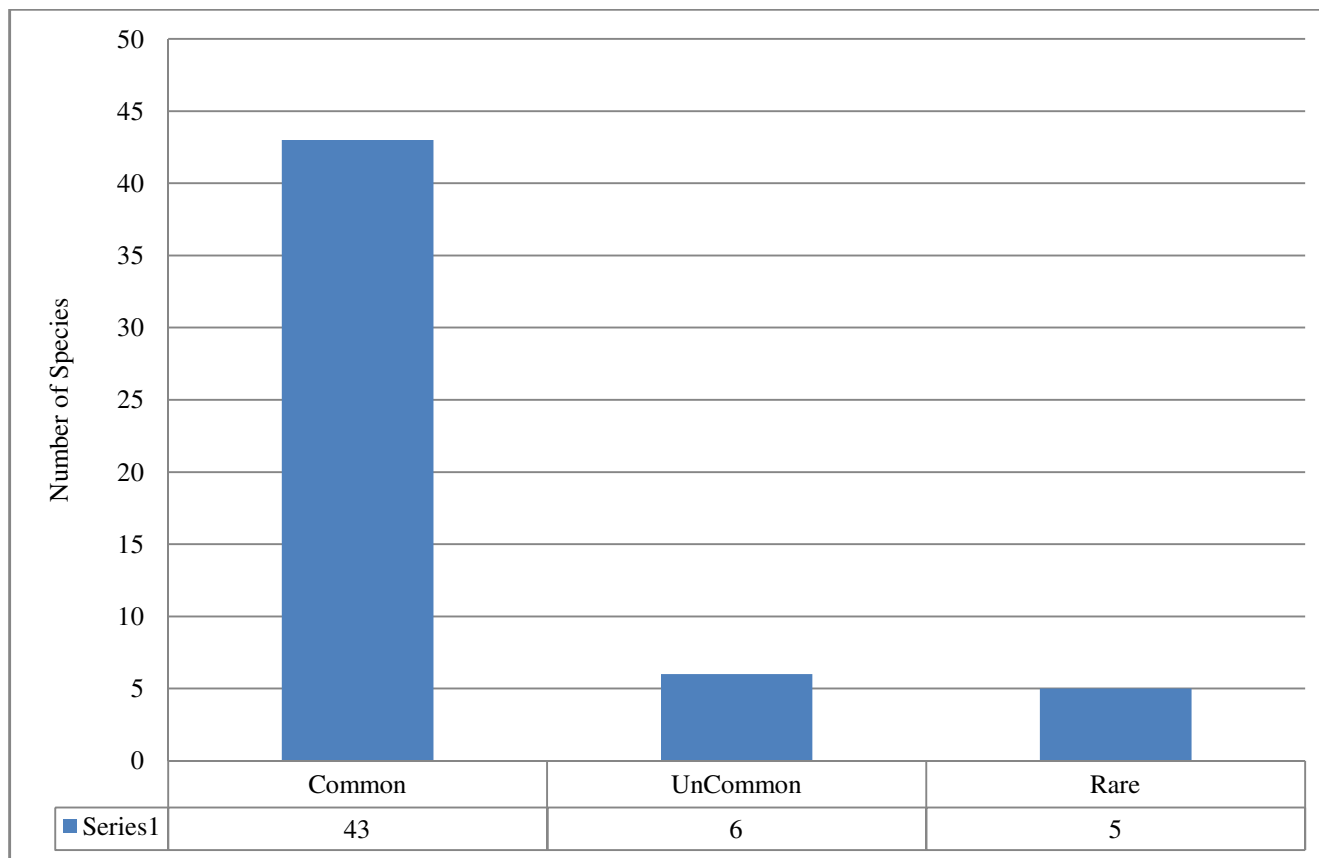


Figure-2: Abundance status.

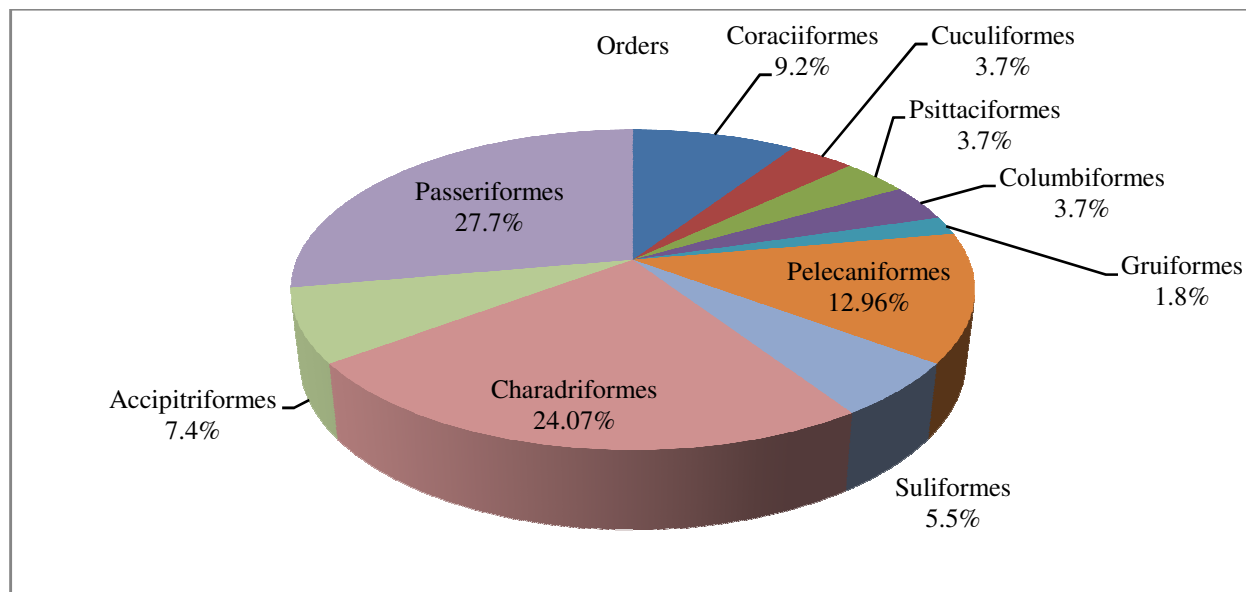


Figure-3: Percentage chart of orders.

Conclusion

Presently, the ecological conditions in mangroves of Zor Island support low density of birds. Due to absence of any previous record, this data can be presented as a baseline data for knowing the status of birds in Zor Island.

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