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STUDY OF WADERS DIVERSITY FROM SELECTED WATER BODIES OF YAVATMAL DISTRICT IN CENTRAL INDIA.

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Abstract:-Wetlands are precious abode and support systems of varied faunal taxas. Shorebirds called waders are one of the important indicators of richness of the wetlands. Waders are become increasingly intolerant of even slight ecosystem disturbance. This research exercise is carried out for successive two years from June 2012 to June 2014 to study wader diversity in selected wetlands of Yavatmal district of central India. In present investigation 62 species belongs to 16 families of 7 orders were recorded from all the four selected dams. The majority of wetland birds observed during this study were wide spread resident comprising 53 % of the total species, followed by widespread winter visitor 23%, local resident-winter visitors 6%, widespread Resident –winter visitors 13 % and seasonal winter visitors 5%.Commercial exploitation, agriculture inside these water bodies in winter and summer, increasing anthropogenic activities are the major threats to these precious abode, this research exercise is an attempt to discourse wader diversity and will be useful in futuristic wetland management practices.

Keywords: Wetlands,taxas,abode,indicator,etc

INTRODUCTION

Wetlands are the most important and diverse habitats for wildlife in general, and birds in particular. Waders, called shorebirds which share several physical characteristics such as long, thin, agile legs and toes; long, sharply pointed tips, distinct curves or spatulate bills; Long necks; elaborate plumes during the breeding season, that help distinguish them as a specific type of bird. Most of the species eat small invertebrates picked out of mud or exposed soil. Around 210 species belongs to different families are described (Ericson et al., 2003; Paton et al., 2003; Thomas et al., 2004a, b; van Tuinen et al., 2004; Paton & Baker, 2006), the waders may be more accurately subdivided as, Scolopacidae (snipe, sandpipers, phalaropes, and allies), Rostratulidae (painted snipe), Jacanidae (jacanas), Burhinidae (thick-knees), Chionididae (sheathbills), Pluvianellidae (Magellanic plover), Ibidorhynchidae (ibisbill), Recurvirostridae (avocets and stilts), Haematopodidae (oystercatchers), Charadriidae (plovers and lapwings). Threskiornithidae (Ibis), Ardeidae (Egret Heron Bittern), Phalacrocoracidae (Cormorant), Anhingidae (Darter), Rallidae (Waterhen Moorhen Coot), Glareolidae (Ruff Pratincole), Laridae (Tern), Motacillidae (Wagtail), Ciconiidae (Stork). Many species of Cold and temperate regions are strongly migratory, but tropical birds are often resident, or move only in response to rainfall patterns. Some of the species, such as Stints, are amongst the longest distance migrants, spending the non-breeding season in the hemisphere. The majority of species eat small invertebrates picked out of mud or exposed soil. Different lengths of bills enable different species to feed in the same habitat, particularly on the coast, without direct competition for food. Many waders have sensitive nerve endings at the end of their bills which enable them to detect prey items hidden in mud or soft soil. Some larger species, particularly those adapted to drier habitats will take larger prey including insects and small reptiles.

Uncontrolled commercial exploitation of wetlands, illegal encroachments, unscientific agriculture in lean period, domestic and anthropogenic disturbances creates tremendous pressure on these precious paradises. This research exercise is undertaken to study wader diversity and its distribution which will be useful in future wetland conservation practices.

MATERIALS AND METHODS

Bird Survey

Survey of birds diversity recorded by weekly visit in duration from Oct. 2013 to Dec. 2014. Binocular (Nikon 10x40 8.2 0) and camera (Nikon D700, 150-500 Sigma lens) was used for bird watching and to photograph them. Population of birds was observed and documented in the morning and evening once in a week from sunrise to four hours after sunrise and from four hours before sunset until sunset. Wader diversity is categorized into widespread resident, widespread winter visitor, local resident, seasonal resident, widespread resident and winter visitor, local resident and winter visitor, seasonal winter visitor and is classified on the basis of "The Book of Indian Birds" (Ali, 1996) and "Pocket Guides of Birds of the Indian Subcontinent" (Grimmet and Inskipp, 2010). Diversity of waders is taxonomically classified and categorized on threaten scale by using latest IUCN Red list.

STUDY AREA

Four water bodies in Yavatmal district are selected for avifaunal observation as mention in table and shown in satellite as well as real-time images.

Sr. no.	Name of water bodies		Location
1	Saykheda Dam	Sk	N $20^0$06'58" E $78^0$28'30"
2	Wai Dam	Wi	N $20^0$02'38" E $78^0$27'44"
3	Karanwadi Dam	Kw	N $20^0$04'37" E $78^0$26'16"
4	Khateshwar Dam	Kh	N $20^0$19'45" E $78^0$16'51"

Saykheda Dam N $20^0$06'58" E $78^0$28'30" | Wai Dam N $20^0$02'38" E $78^0$27'44" | Karanwadi Dam N $20^0$04'37" E $78^0$26'16" | Khateshwar Dam N $20^0$19'45" E $78^0$16'51"

Result and Discussion

Table: List of recorded waders from selected water bodies of Yavatmal district.

Sr. No	Order	Family	Scientific Name	Common Name	Status (IUCN Redlist 2015)	Habit	Sk	Wi	Ka	Kh
1	Pelecaniformes	Threskiornithidae	*Threskiornis melanocephalus*	Black-headed Ibis	NT	R	v	v	v	v
2			*Pseudibis papillosa*	Indian Black Ibis	LC	R	v	v	v	v
3			*Plegadis falcinellus*	Glossy Ibis*	LC	RW	v	-	-	-
4			*Platalea leucorodia*	Eurasian Spoonbill	LC	RW	-	v	-	-
5		Ardeidae	*Ixobrychus cinnamomeus*	Cinnamon Bittern	LC	R	v	-	-	-
6			*Nycticorax nycticorax*	Black-crowned Night Heron	LC	R	v	v	-	-
7			*Ardeola grayii*	Indian Pond Heron	LC	R	v	v	v	v
8			*Bubulcus ibis*	Cattle Egret	LC	R	v	v	v	v
9			*Ardea cinerea*	Grey Heron	LC	RW	v	v	v	v
10			*Ardea purpurea*	Purple Heron	LC	R	v	v	-	v
11			*Butorides striatus*	Little Heron	R	R	v	-	-	-
12			*Ardea alba*	Great Egret	LC	RW	v	v	v	v
13			*Egretta intermedia*	Intermediate Egret	LC	R	v	v	v	v
14			*Egretta garzetta*	Little Egret	LC	R	v	v	v	v
15	Suliformes	Phalacrocoracidae	*Phalacrocorax niger*	Little Cormorant	LC	R	v	v	v	v
16			*Phalacrocorax fuscicollis*	Indian Cormorant	LC	R	v	v	v	v
17			*Phalacrocorax carbo*	Great Cormorant	LC	RW	v	v	-	v
18		Anhingidae	*Anhinga melanogaster*	Oriental Darter	NT	R	v	v	v	-
19	Gruiformes	Rallidae	*Amaurornis phoenicurus*	White-breasted Waterhen	LC	R	v	v	v	v
20			*Porphyrio porphyrio*	Purple Swamphen	LC	R	v	-	-	v
21			*Gallinula chloropus*	Common Moorhen	LC	R	v	-	-	v
22			*Fulica atra*	Common Coot	LC	rW	v	v	v	v
23	Charadriformes	Recurvirostridae	*Himantopus himantopus*	Black-winged Stilt	LC	RW	v	v	v	v
24		Charadriidae	*Vanellus malabaricus*	Yellow-wattled Lapwing	LC	R	v	v	-	-
25			*Vanellus indicus*	Red-wattled Lapwing	LC	R	v	v	v	v
26			*Charadrius dubius*	Little Ringed Plover	LC	RW	v	v	v	v
27			*Charadrius alexandrinus*	Kentish Plover	LC	RW	v	v	v	-
28		Jacanidae	*Hydrophasianus chirurgus*	Pheasant-tailed Jacana	LC	R	v	v	-	v
29			*Metopidius indicus*	Bronze-winged Jacana	LC	R	v	-	-	v
30		Scolopacidae	*Gallinago stenura*	Pintail Snipe	LC	W	v	v	-	-
31			*Gallinago gallinago*	Common Snipe	LC	R	v	v	v	v
32			*Limosa limosa*	Black-tailed Godwit	NT	W	v	-	-	-
33			*Tringa erythropus*	Spotted Redshank	LC	W	v	-	-	-
34			*Tringa totanus*	Common Redshank	LC	sW	v	-	-	-
35			*Tringa stagnatilis*	Marsh Sandpiper	LC	W	v	v	-	-
36			*Tringa nebularia*	Common Greenshank	LC	W	v	v	-	-
37			*Tringa ochropus*	Green Sandpiper	LC	W	v	v	-	-
38			*Tringa glareola*	Wood Sandpiper	LC	W	v	v	v	v
39			*Actitis hypoleucos*	Common Sandpiper	LC	sW	v	v	v	v
40			*Calidris minuta*	Little Stint	LC	W	v	v	-	-
41			*Calidris temminckii*	Temminck's Stint	LC	W	v	v	v	-
42			*Limicola falcinellus*	Broad-billed Sandpiper*	LC	W	v	-	-	-
43			*Philomachus pugnax*	Ruff	LC	W	v	-	-	-
44		Glareolidae	*Glareola pratincola*	Collared Pratincole*	LC	W	-	v	-	-
45			*Glareola lactea*	Little Pratincole	LC	R	v	v	v	-
46		Laridae	*Sterna aurantia*	River Tern	NT	R	v	v	v	v
47			*Sterna albifrons*	Little Tern*	LC	R	-	v	-	-

48	Coraciformes	Alcedinidae	*Halcyon smyrnensis*	White-breasted Kingfisher	LC	R	v	v	v	v
49			*Alcedo atthis*	Common Kingfisher	LC	R	v	v	v	v
50			*Ceryle rudis*	Pied Kingfisher	LC	R	v	v	v	v
51	Passeriformes	Motacillidae	*Motacilla flava*	Yellow Wagtail	LC	W	v	v	v	v
52			*Motacilla citreola*	Citrine Wagtail	LC	rW	v	v	-	v
53			*Motacilla cinerea*	Grey Wagtail	LC	rW	v	v	v	v
54			*Motacilla alba*	White Wagtail	LC	rW	v	v	v	v
55			*Motacilla maderaspatensis*	White-browed Wagtail	LC	R	v	v	v	v
56	Ciconiformes	Ciconiidae	*Mycteria leucocephala*	Painted Stork	NT	R	v	v	v	-
57			*Ciconia nigra*	Black Stork*	LC	sW	-	v	v	-
58			*Ciconia episcopus*	Woolly-necked Stork	LC	R	v	v	v	-
59			*Anostomus oscitans*	Asian Open bill	LC	R	v	v	v	v
60		Burhinidae	*Burhinus oedicnemus*	Eurasian Thick-knee*	LC	R	v	v	-	-
61			*Esacus recurvirostris*	Great Thick-knee*	NT	R	v	-	-	-
62		Laridae	*Larus brunnicephalus*	Brown Headed Gull*	LC	W	v	-	-	-

NT- Near threaten; LC- Least concern R- widespread resident, W- widespread winter visitor, r- local resident, s- seasonal resident, RW- widespread resident and winter visitor, rW- local resident and winter visitor, sW- seasonal winter visitor. (*) Rare citing in region, (√) Species observed, (-) Species not observed.

Fig 1: Family wise distribution of waders

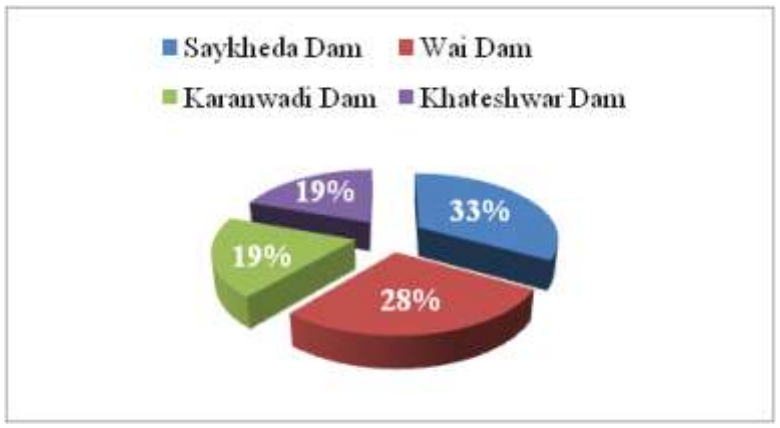


Fig 2: Species wise richness of waders

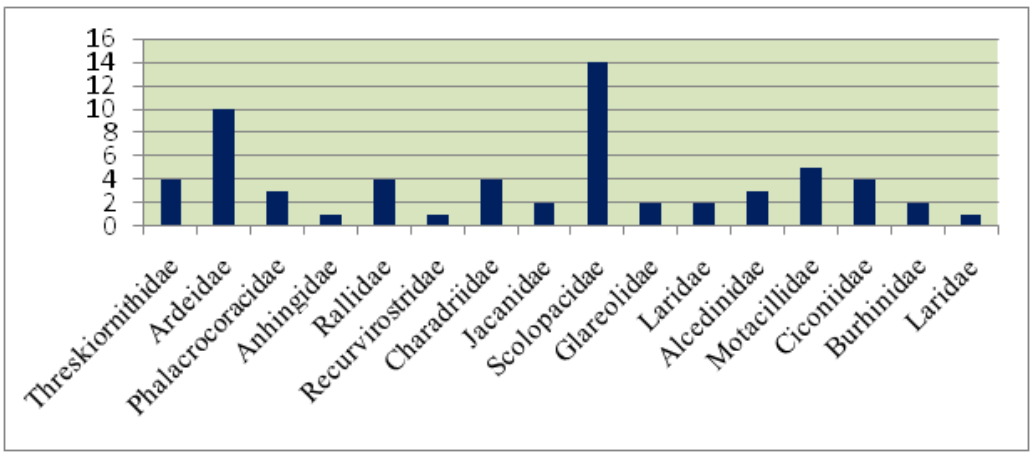
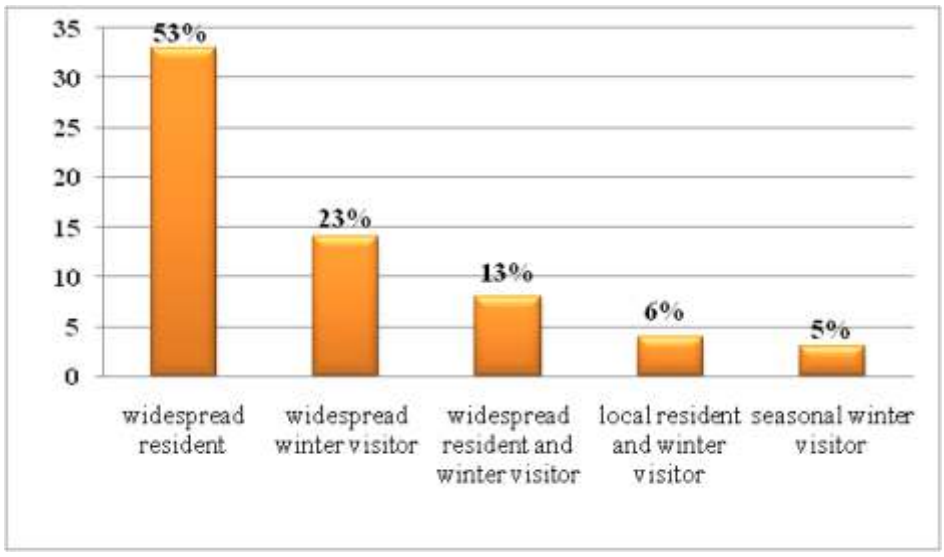


Fig3: Habit status of the waders



In bird survey for the period of June 2012 to June 2014 from the selected fresh water bodies of Yavatmal district, 62 species of waders belongs to 7 orders (Pelecaniformes, Suliformes, Gruiformes, Charadriformes, Coraciformes, Ciconiformes, Passeriformes) and 16 families (Threskiornithidae, Ardeidae, Phalacrocoracidae, Anhingidae, Rallidae, Recurvirostridae, Charadriidae, Jacanidae, Scolopacidae, Glareolidae, Laridae, Alcedinidae, Motacillidae, Ciconiidae, Burhinidae and Laridae) were recorded. In present investigation, 33% of the total taxas were observed at Saykheda Dam, 28% at Wai, 19% at Karanwadi and 19% at Khateshwar Dam (Fig.1).

Family Threskiornithidae contains 4 species, Ardeidae 10, Phalacrocoracidae 3, Anhingidae 1, Rallidae 4, Recurvirostridae 1, Charadriidae 4, Jacanidae 2, Scolopacidae 13, Glareolidae 2, Laridae 2, Alcedinidae 3, Motacillidae 5, Ciconiidae 4, Burhinidae 2 and Laridae 1. (Fig. 2)

Categorization of birds in habit, analyzed as 53% widespread resident, 23% widespread winter visitor, 13% widespread resident and winter visitor, 6% local resident and winter visitor and 5% seasonal winter visitor. (Fig. 3)
Broad-billed Sandpiper (Limicola falcinellus) is first time sighted in this region and 6 other recorded species, Glossy Ibis, Collared Pratincole, Little Tern, Eurasian Thick-knee, Great Thick-knee and Brown Headed Gull are amongst the rarely sighted waders in central India.

This is very small scientific attempt to produce database for futuristic conservation program and will be helpful for wetland managers to save these threatened paradises.

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