

STUDIES ON AVIAN DIVERSITY IN AND AROUND THE REGION OF BHAWANIPATNA, KALAHANDI

Samita Padhi and Siba Prasad Parida

Department of Zoology, School of Applied Sciences,

Centurion University of Technology and Management, Bhubaneswar, Odisha, India.

ABSTRACT

Bhawanipatna which is the District headquarters of Kalahandi District is located in the Centre of large mountains and plateaus and rich in natural habitat. A total of 48 species belonging to 13 orders and 28 families were recorded during the study of avifauna diversity in and around the region of Bhawanipatna, Kalahandi. The avifauna diversity shows the importance of the area as an ideal bird habitat.

INTRODUCTION

India harbors 1124 species of bird among 13% of the 9600 bird's species of the world (Ali and Ripley, 1987). However with the new classification coming in to force, the number of species may will be 1300 (Javed and Kaul,2000).The avifauna of Odisha state have mainly studied and documented by Ball (1876,1877), Mukherjee (1952), Ripley(1979), Abudalali (1984), Beeheler *et al.*, (1985), Singh and Rout (1992), Kar and Sahu (1993,1999), Pandav (1997), Gopi *et al.*,(2006) and Sahu and Rout (2005).The information on birds of Odisha is based on studies and surveys from its coastal region and most of the studies were focused on the water birds made some valuable contribution (Biswas, 1994). Urban biodiversity has received very little attention from conservation biologists as compared to natural and protected ecosystem (Jules, 1997; Vandermeer, 1997). The studies and documentation of the avifauna in the Bhawanipatna region is very least. In order to fill up the lacunae, a short term survey was carried out to document the avifaunal diversity of Bhawanipatna region. Moreover the studies on the biodiversity, especially on birds in and around the nearby areas of Bhawanipatna, which are very much rich in their natural habitat are extremely minimal. This study was carried out with the aim to fetch out the proper checklist of birds with their status in the present study area.

MATERIALS AND METHODS

Study area

Bhawanipatna is the District headquarters of Kalahandi District of Odisha is located in between 19° 53'60 toward north longitude to 83° 10'12.00 towards east latitude. It has an average elevation of 248m and is located in south western part of Odisha. Bhawanipatna is occupied with long commences mountain tract covering an area of about 3665 sq km. Climate of Bhawanipatna is extreme. The hot season is from March to May followed

by the south-west monsoon season from June to September. The cold season is from December to February. The average rainfall is about 1378.3mm. The relative humidity is high in the south-west monsoon and past monsoon. The present study area is consisting of tropical forests depicts generally two main types which is moist and deciduous region and covers different regions of Bhawanipatna. Jamunasagar and Palsapada were taken as the two important study areas are rich in Sal and extensive Bamboo forests, Boswellia forest, dry Teak forest. These are situated in the remote and inaccessible areas and on the steep hill slopes containing trees of various age classes. Large number of small rivers and streams are originated from hills of Bhawanipatna and drain in to the river Tel which is the major river of Kalahandi District. The major habitat types in the areas are deciduous forest, wetlands, open areas and some water reservoir like dam. Many water like small "Jheel" ponds are also seen around different villages of Bhawanipatna. There is no doubt it is home to a variety of flora and fauna.

METHODOLOGY

Observations on the avian diversity of Bhawanipatna were carried out during the month of December, 2019 to February, 2020 as a part of dissertation project for Master of Science in Zoology. The study area includes Jamunasagar, Palsapada, Hilltown and Naktiguda were more emphasized and were decided prior to the survey due to its highly rich natural habitat. The survey was conducted on foot and the birds were observed during their most active times in the day i.e. from 5.30 to 10.00 am and from 3.00 to 6.00pm in the morning and evening respectively. All the sightings and observations were made with the help of 16×52 Nikon binocular. Photographs of birds were taken with their natural habitat with Nikon D3400 and Canon 200D with a 300mm and 250mm telephoto lens respectively for the camera. All the observations and identification was based according to (Grimmet *et al.*, 2001) and only those species with confirmed identification were listed in this paper. No birds were disturbed or harmed while observing within their natural habitat. The taxonomy and nomenclature are used as per Inskipp *et al.* (1996), while common name is based on Grimmet *et al.*, (2001).

RESULT AND DISCUSSIONS

The study resulted total of 48 species of birds belonging to 13 Orders and 28 Families have been reported from the Bhawanipatna region. Among the 13 orders: Passeriformes dominated the list with 12 families and 21 species, Pelecaniformes with 5 species belonging to 2 families, Charadriiformes having 2 families with 4 species, Coraciiformes having 3 families with 3 species, Columbiformes having one family with 3 species, Accipitriformes having one family with 2 species, Psittaciformes having single family with 2 species and Piciformes, Bucerotiformes, Suliformes, Cuculiformes each having one family with one species each.

Out of 48 species of birds 7 species were found to be winter visitors and remainings were found to be resident. All the species of birds comes under the category of Least Concern (LC) of International Union for Conservation of Nature and Natural resources (IUCN). 8 water birds species were recorded from the Bhawanipatna region during the study period, belonging to the

Order Charadriiformes and Pelecaniformes. Besides these, water dependent birds such as common and white throated Kingfisher, Grey and White-browed Wagtails were also seen regularly around the water bodies of the present study area. This study provides a baseline data of the avian diversity of Bhawanipatna region, therefore emphasizing on better management of habitat and conservation of its avifaunal diversity. Further comprehensive studies on species richness and its distribution are needed for better orientation of management policies.

Table-1. The list of Bird species sighted during the month of Dec-2019 to Feb- 2020

SI No	Common Name	Zoological Name	Family
	Rock Pigeon	<i>Columba livia</i>	Columbidae
	Spotted Dove	<i>Spilopelia chinensis</i>	Columbidae
	Laughing Dove	<i>Spilopelia senegalensis</i>	Columbidae
	Asian Koel	<i>Eudynamis scolopaceus</i>	Cuculidae
	Grey headed swamp hen	<i>Porphyrio poliocephalus</i>	Rallidae
	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae
	White breasted Water hen	<i>Amaurornis phoenicurus</i>	Rallidae
	Yellow wattleed lapwing	<i>Venellus malabaricus</i>	Charadriidae
	Red wattleed Lapwing	<i>Charadriidae Venellus</i>	Charadriidae
	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae
	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae
	Indian cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae
	Indian Pond heron	<i>Ardeola grayii</i>	Ardeidae
	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae
	Little Egret	<i>Egretta garzetta</i>	Ardeidae
	Intermediate Egret	<i>Ardea intermedia</i>	Ardeidae
	Black Ibis	<i>Pseudibis papillosa</i>	Threskiornithidae
	Black-Winged kite	<i>Elanus caeruleus</i>	Accipitridae
	Shikra	<i>Accipiter badius</i>	Accipitridae
	Eurasian Hoopoe	<i>Upupa epops</i>	Upupidae
	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae
	White Throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae
	Red Kingfisher	<i>Ceryle rudis</i>	Cerylidae
	Green Bee-eater	<i>Meropus orientalis</i>	Meropidae
	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae
	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	Megalaimidae
	Rose ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae
	Plum headed Parakeet	<i>Psittacula cyanocephala</i>	Psittacidae
	Black-Hooded Oriole	<i>Oriolas xanthornus</i>	Oriolidae
	Black Drongo	<i>Dicrurus macrocerus</i>	Dicruridae
	White bellied Drongo	<i>Dicrurus caerulescens</i>	Dicruridae
	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae

House crow	<i>Corvus splendens</i>	Corvidae
Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae
Jungle babbler	<i>Argya striata</i>	Leiothrichidae
Common Myna	<i>Acridotheres tristis</i>	Sturnidae
Asian pied Starling	<i>Gracupica contra</i>	Sturnidae
Brahminy Starling	<i>Sturnia pagodarum</i>	Sturnidae
Indian Robin	<i>Copsychus fulicatus</i>	Muscicapidae
Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae
Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae
Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae
Jerdon's Leaf bird	<i>Chloropsis jerdoni</i>	Chloropseidae
House Sparrow	<i>Passer domesticus</i>	Passeridae
Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae
Grey Wagtail	<i>Motacilla cinerea</i>	Motacillidae
Red-rumped Swallow	<i>Cecropis daurica</i>	Hirundinidae
White-browed wagtail	<i>Motacilla maderaspatensi</i>	Motacillidae

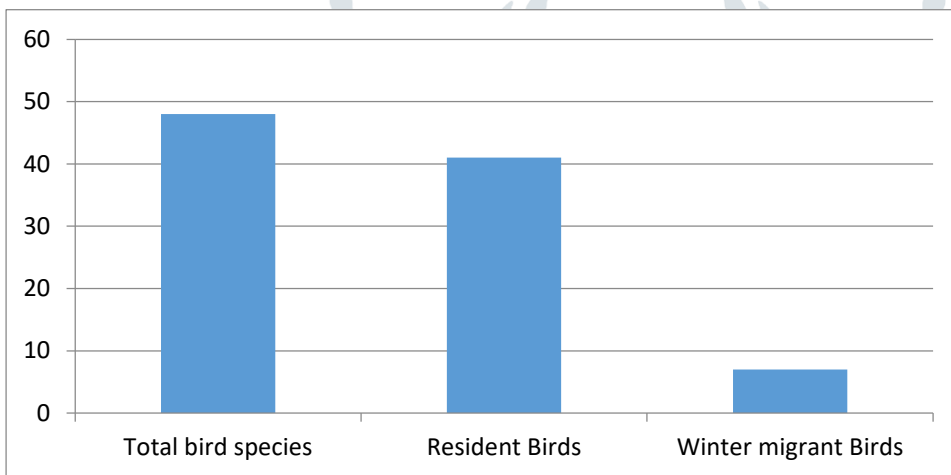


Fig-1 Graph showing the resident birds and winter migrant birds out of total bird species recorded

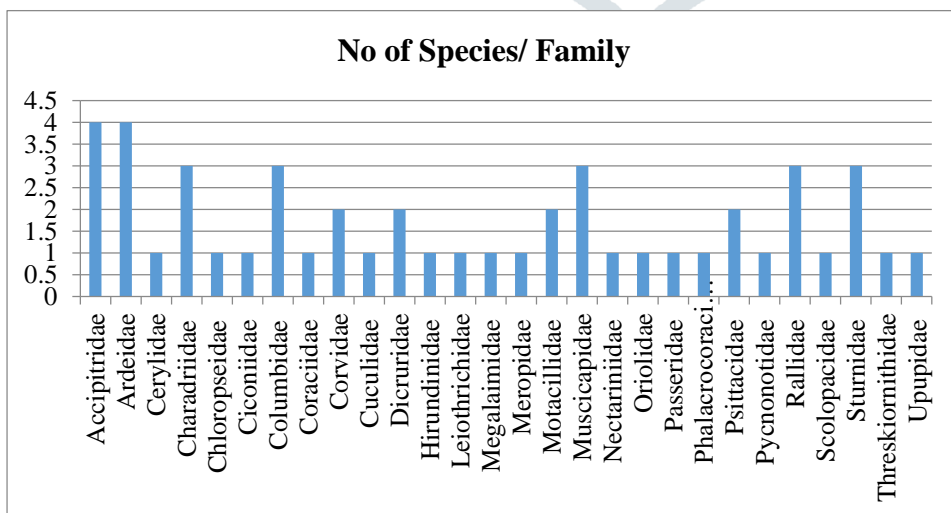

















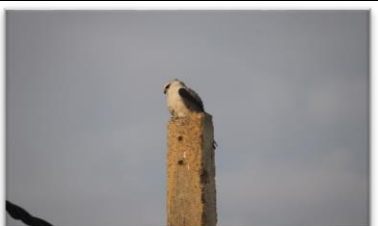



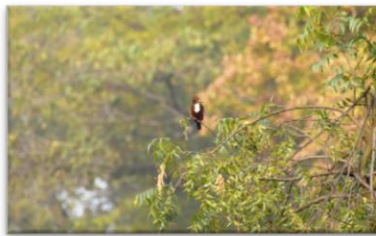







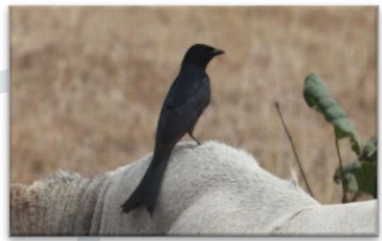




















Fig-2 Graph showing number of species per family of birds recorded

Images of birds recorded in Bhawanipatna regions follows:

		
<i>Columba livia</i>	<i>Spilopelia chinensis</i>	<i>Spilopelia senegalensis</i>
		
<i>Eudynamys scolopaceus</i>	<i>Porphyrio poliocephalus</i>	<i>Gallinu lachloropus</i>
		
<i>Amaurorni sphoenicurus</i>	<i>Venellu smalabaricus</i>	<i>Charadriidae venellus</i>
		
<i>Charadrius dubius</i>	<i>Tringao chropus</i>	<i>Microcarbo niger</i>
		
<i>Ardeola grayii</i>	<i>Egretta garzetta</i>	<i>Ardea intermedia</i>
		
<i>Bubulcus ibis</i>	<i>Pseudibis papillosa</i>	<i>Elanus caeruleus</i>
		
<i>Accipiter badius</i>	<i>Upupa epops</i>	<i>Alcedo atthis</i>

 <p><i>Halcyon smyrnensis</i></p>	 <p><i>Ceryle rudi</i></p>	 <p><i>Meropus orientalis</i></p>
 <p><i>Coracius benghalensis</i></p>	 <p><i>Psilopogon haemacephalus</i></p>	 <p><i>Psittacula krameri</i></p>
 <p><i>Psittacula cyanocephala</i></p>	 <p><i>Oriolax anthornus</i></p>	 <p><i>Dicruru smacrocerus</i></p>
 <p><i>Dicrurus caeruleus</i></p>	 <p><i>Dendrocitta vagabunda</i></p>	 <p><i>Corvus splendens</i></p>
 <p><i>Pycnonotus cafer</i></p>	 <p><i>Tordooides striata</i></p>	 <p><i>Acridotheres tristis</i></p>
 <p><i>Gracupica contra</i></p>	 <p><i>Sturnia pagodarum</i></p>	 <p><i>Copsychus fulicatus</i></p>
		

<i>Copsychus saularis</i>	<i>Saxicola caprata</i>	<i>Cinnyris asiaticus</i>
		
<i>Chloropsis jerdoni</i>	<i>Passer domesticus</i>	<i>Anastomus oscitans</i>
		
<i>Motacilla cinerea</i>	<i>Motacilla maderaspatensis</i>	<i>Cecropis daurica</i>

Gopi and Pandav (2007) studied the Avifauna of Bhitarkanika where a total of 263 birds belonging to 63 families were recorded, out of which 147 were resident and 99 were winter migrants. Das *et al.*, (2013) recorded a list of total 157 species of birds belonging to 56 families along with its frequency and status from Baisipalli Wildlife Sanctuary, Odisha. Palei *et al.*, (2014) recorded a total no of 122 birds representing 49 families of 14 orders while studying avifauna of Athgarh Forest Division, Odisha, Eastern India. Pradhan *et al.*, (2016) during their study of avifauna diversity in a Sacred Natural Forest site of Odisha recorded 28 bird species and distinguished them with respect to their food habit. Palei *et al.*, (2011) found a total of 123 species of birds belonging to 15 orders and 49 families from Karlapat Wildlife Sanctuary, Bhawanipatna, Odisha. Mallik *et al.*, (2015) recorded a total of 95 species of birds belonging to 43 families and 15 orders from the agronomy field of O.U.A.T campus, Bhubaneswar. Reddy *et al.*, (2013) studied on bird diversity of Baitarani Reserve Forest of Joda, Keonjhar, Odisha and recorded total of 117 species belonging to 17 orders. Das *et al.*, (2007) recorded a total of 117 species belonging to 35 families and 13 orders from Kakoijana (proposed) Wildlife Sanctuary, Assam, India. In this way many works have been conducted across different regions of Odisha belonging mostly to the Coastal area. But study of avifauna diversity in the region of Bhawanipatna, Kalahandi is very rare. So this study can provide access to the present status of birds in their natural habitat.

CONCLUSION

Bhawanipatna is growing urbanized area surrounded by many natural vegetation like small wetlands, mountains and plateaus which harbors many different species of birds and enriches its biodiversity. Since people of surrounding areas depends heavily on those natural habitat for various resources and most of the mixed deciduous forests were being cleared for the human exploitation. Fishery potential is exploited from different water bodies of the present study area by the local person who indirectly affects the insufficient

supply of foods to water birds. This may lead to either rapid death or lowered their capacity to survive in the inclement condition. So, it is advisable to promote awareness regarding birds and habitat conservation through training and exhibition for all the level of people.

ACKNOWLEDGEMENTS

I express my sincere thanks to my Guide Dr Siba Prasad Parida, Associate Professor in Zoology Department, CUTM, Bhubaneswar for giving me such an opportunity to work on this project and also for providing all the guidance throughout this study. I also convey my heartfelt thanks to Mr.Shanta Babu Padhi for sharing his knowledge regarding this topic and also for assisting me throughout the study for the successful completion of my project.

REFERENCES

- Abudalaali, H. (1984) Seasonnality and occurrence of birds in the eastern ghat. *Journal of BNHS*, 81:191.
- Ali, S. and Ripley, S.D. (1987) *Handbook of the Birds of India and Pakistan*, Oxford press, New Delhi, 289.
- Ball, V. (1876) Notes on some birds collected in Sambalpur and Odisha Stray feathers, 4:232-237.
- Ball, V. (1877) Notes on birds observed in the region between the Mahanadi and gosavari rivers, Stray feathers, 5:410-420.
- Beeheler, B.M., Krishna Raju, K.S.R. and Ali, S. (1986) Avian use of man distributed forest habitats in the eastern Ghats, India, *Ibis*, 129:197:211.
- Das, J.P., Nath, N.K., Singha, H. and Sahu, H.K. (2007) Winter birds of Kakoijana (Proposed) Wildlife Sanctuary, Assam, India. *Indian Birds*, 3(1): 16-23.
- Das, S.K., Sahoo, D.P., Dash, N. and Sahu, H.K. (2013) Avifaunal diversity of Baisipalli Wildlife Sanctuary, Odisha, India. *Indian Birds*, 8(4).
- Debta, S., Rout, S.D., Sahu, H.K. and Kar, C.S. (2014) Birds of Balipadar Bhentoi Community conserved Blackbuck Habitat, Ganjam, Odisha, India. *Indian Forester*, 140(10): 965-969.
- Gopi, G.V., Pandav, B.(2006) Avifauna of Bhitarkanika Mangroves, India. *Zoos Print Journal*.22 (10): 2839-2847.
- Grommet, R., Inskipp, C. and Inskipp, T. (2001) *Pocket Guides to the birds of Indian Subcontinent*. Cristopher Helm Publishers, Oxford University Press, 384.
- Jules, E.S. (1997) Danger in dividing conservation Biology and Agro ecology. *Conservation Biology*. 11:1272-1273.
- Mallik, A, Chand, D.S., Singh. A. and Parida, S.P. (2015) Studies on Avifauna diversity of agronomy field of O.U.A.T campus, Bhubaneswar, India. *Current Life Sciences*,(2): 46-57.
- Mukherjee, A.K. (1952) On a collection of birds from the Similipal Hills. *Rec. Indian Mus*. 50: 157-171.
- Palei, H.S., Debata, S., Mahapatra, P.P. and Mishra, A.K.(2017) Diversity and Status of Birds in Bonai Forest Division, Odisha, India. *e-planet* 15(2): 166-177.

- Palei, H.S., Mahapatra, P.P., Dutta, S.K., Singh, L.A.K. , Sahu, H.K. and Rout, S.D. (2011) Avifauna of Karlapat Wildlife Sanctuary, Southern Odisha, India. *The Indian Forester*, 197-1203.
- Palei, C.N., Rath, B.P., Sajan, S.K. and Mishra, A.K. (2014) Avifauna of Athgarh Forest Division, Odisha. Eastern India. *Journal of Entomology and Zoology Studies*. 2 (5): 329-334
- Pradhan, A, Mishra, P. and Behera, N. (2016) Avian Diversity in a Sacred Natural Forest In Odisha. *The Ecoscan* 10(1&2): 91-95.
- Pradhan, R.N., Das, U.P., Mohapatra, R.K. and Mishra, A.K.(2013) Checklist of Birds in and Around Ansupa Lake, Odisha, India. *Int. Res. Environment Sci.* 2 (11): 1-5.
- Reddy, R., Bhaskanran, G., Swamy, K. and Adimallaiiah, D.(2013) Avian Diversity in and around the Baitarani Reserve Forest of Joda, Keonjhar, Odisha, India. *Newsletter for Birdwatchers* 53 (5): 2013.
- Vandemeer, J. (1997) Avifauna of Agro ecosystem of maidan area of Karnataka, *Zoos' Print Journal*. 21(4):2217-2219.

