



Bird diversity of Bhoras Bk. Dam and its adjacent areas Taluka- Chalisgaon, Dist. Jalgaon, Maharashtra, India.

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Abstract

The present study was aimed to observe and record the bird diversity of Bhoras Bk. dam and its adjacent area. This is the first avifauna report of Bhoras Bk. dam and its adjacent area. In this study attempt has been made to record bird diversity of Bhoras Bk. Dam and its adjacent area during October 2022 to June 2023. In the present study total 90 species including water and the land bird were recorded belonging to 15 avifaunal orders and 43 families. Order Passeriformes is dominant in the study area, including 21 families and 36 species (40%), followed by Ciconiformes with 2 families and 09 species (10%), Ansariformes with 1 families and 7 species (7%), Coraciiformes with 4 families and 6 species (7%), Charadriiformes with 4 families and 6 species (7%). This study represents that species diversity is abundant in spite of many anthropogenic activities. This study will be useful for conservation of bird diversity of this area.

Key words: Bird diversity, Bhoras Bk. Dam, Chalisgaon, Jalgaon, Maharashtra, India.

Introduction:

Freshwater wetlands cover about 0.8% of the Earth's surface but have extremely high species diversity (Barbarossa *et al.*, 2020). Freshwater wetlands provide habitat for about one-fifth of all species (especially endemic and threatened species) and one-third of all vertebrate species worldwide (Wu *et al.*, 2019). Wetlands are an integrated system so they are affected by changes in the physical and chemical parameters of the hydrosphere at the basin scale. These in turn affect wetland-dependent communities as well as ecosystem attributes such as species richness, distribution and density (Burkert, 2004).

Bird fauna is one of the most important ecological indicators to evaluate habitat quality. Most birds are beneficial to humanity. Birds play a useful role in controlling insect pests of agricultural crops, such as predatory rodents, scavengers, seed distributors, and pollinators. This is why birds are reared not only to maintain ecological balance but also to obtain economically important products such as down. (Simon *et al.*, 2002).

Partial migration, when a population consists of both migratory and resident individuals, is common in birds as well as many other taxa. Although research on migration has been popular in recent decades, research on partial migration has received less attention. Therefore, the drivers of migratory behaviour of partially migratory populations remain unclear. Several hypotheses have been proposed to explain partial migration, including the dominance hypothesis, body size hypothesis, and arrival time hypothesis. These hypotheses are based on

assumption that resources are limited during winter or that there are physiological limitations of environmental conditions during winter, forcing some individuals to be unable to tolerate those conditions. must migrate i.e. non-breeding partial migration (Chapman *et al.* 2011).

Birds are the most important biodiversity species on Earth and are sensitive to environmental changes. They act as a key indicator for assessing the status of ecosystem health. They are an integral part of the food chain and food web. Birds play a vital role in maintaining the balance in nature. They also help in pollinate flowers, dispersal of seeds and control pests. The richness, abundance, and composition of bird communities are often used by ecologists to understand species diversity in the specific region. Bird diversity of Bhoras Bk. Dam and its adjacent areas is lacking, in the present work an attempt has been made to report the bird diversity.

Material and Methods Study Area:

The Bhoras Dam is an earth-fill dam at Bhoras Bk., Tal- Chalisgaon, District- Jalgaon, Maharashtra, India (20°28'55.2"N 74°57'48.4"E). Water from this dam is used for agricultural purposes. From November to January, water levels drop, exposing large areas of shallow wetlands. This wetland attracts migratory birds during this season.

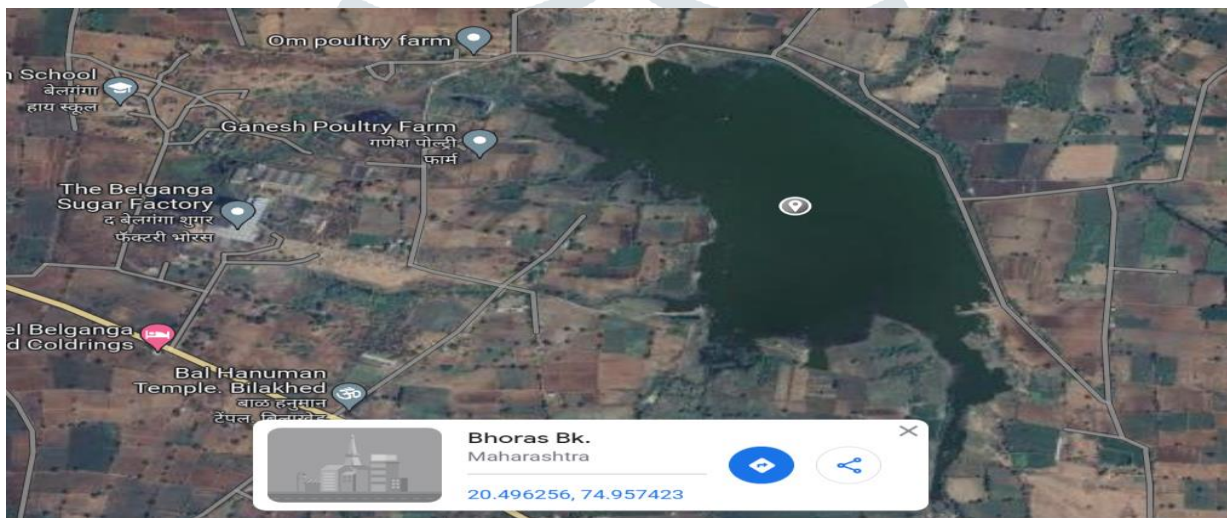


Fig: 1 Map of Bhoras Bk. and its adjacent areas, Chalisgaon, Dist- Jalgaon, Maharashtra.

Nikon Aculon A211 10x50 binoculars are used for close-up bird watching. For photography, a Nikon Coolpix B700 camera was used. Photos were taken between 6:30 a.m. and 11:00 a.m. and from 4:30 p.m. to 6:30 p.m. from October 2022 to June 2023. Regular field visits were conducted throughout this period. No bird specimens were collected and research was based solely on photos, videos and audio recordings. The Internet Birds database and other related publications (Ali, 2002 and Grimmett *et al.*, 2011) were used for bird identification.

Table1: Bird diversity of Bhoras Bk. Dam and its adjacent areas, Chalisgaon, Dist- Jalgaon, Maharashtra, India.

Sr. N.	Request and Family	Common Name	Scientific Name	Ecological Status	IUCN Status
1.	Podicipediformes				
	1. Podicipedidae	1. Little Grebe	<i>Tachybaptus ruficollis (Pallas, 1764)</i>	WM	LC
2.	Ciconiiformes				
	2. Ardeidae	2. Indian Pond Heron	<i>Ardeola grayii (Sykes, 1832)</i>	R	LC
		3. Grey Heron	<i>Ardea cinerea (Linnaeus, 1758)</i>	WM	LC
		4. Cattle Egret	<i>Bubulcus ibis (Linnaeus, 1758)</i>	R	LC
		5. Little Egret	<i>Egretta garzetta (Linnaeus, 1766)</i>	R	LC
		6. Large Egret	<i>Casmerodius albus (Linnaeus, 1758)</i>	R	LC
		7. Median Egret	<i>Mesophoyx intermedia (Wagler, 1829)</i>	R	LC
	3. Ciconidae	8. Asian Open bill Stork	<i>Anastomus oscitans (Boddaert, 1783)</i>	R	LC

		9. painted stork	<i>Mycteria leucocephala</i>	WM	NT
		10. Black Necked Stork	<i>Ephippiorhynchus asiaticus</i> (Linn.,1790)	WM	NT
3.	Ansariiformes				
	4. Anatidae	11. Northern Pintail	<i>Anas acuta</i> (Linnaeus, 1758)	WM	LC
		12. Eurasian teal	<i>Anas crecca</i> (Linnaeus, 1758)	WM	LC
		13. Red Crested Pochard	<i>Netta rufina</i> (Pallas, 1773)	WM	LC
		14. Lesser whistling duck	<i>Dendrocygna javanica</i> (Horsfield, 1821)	WM	LC
		15. Spot Billed Duck	<i>Anas poicillorhyncha</i> (Forster JR,1781)	R	LC
		16. Gadwall	<i>Mareca strepera</i> (Linnaeus, 1758)	WM	LC
		17. Common Pochard	<i>Aythya farina</i> (Linnaeus, 1758)	WM	LC
4.	Falconiformes				
	5. Accipitridae	18. Black Shouldered Kite	<i>Elanus caeruleus</i> (Desfontaines, 1789)	R	LC
		19. Shikra	<i>Accipiter badius</i> (Gmelin, 1788)	R	LC
5.	Gruiformes				
	6. Rallidae	20. Purple Moorhen	<i>Porphyrio porphyrio</i> (Linnaeus, 1758)	R	LC
		21. Common Moorhen	<i>Gallinula chloropus</i> (Linnaeus, 1758)	R	LC
		22. White Breasted Waterhen	<i>Amauromis phoenicurus</i> (Pennant,1769)	R	LC
		23. Common Coot	<i>Fulica atra</i> (Linnaeus, 1758)	R	LC
6.	Pelecaniformes				
	7 Phalacrocoracidae	24. Little Cormorant	<i>Phalacrocorax niger</i> (Vieillot, 1817)	R	LC
		25. Greater Cormorant	<i>Phalacrocorax carbo</i> (Vieillot, 1817)	R	LC
		26. Indian Cormorant	<i>Phalacrocorax fuscicollis</i> (Stephans, 1826)	R	LC
		27. Red-naped Ibis	<i>Pseudibis papillosa</i> (Temminck, 1824)	R	LC
	8. Anhingidae	28. Darter	<i>Anhinga melanogaster</i> (Flag, 1769)	R	NT
7.	Charadriiformes				
	9. Recurvirostridae	29. Black Winged Stilt	<i>Himantopus himantopus</i> (Linnaeus, 1758)	WM	LC
	10. Charadriidae	30. Little ringed plover	<i>Charadrius dubius</i> (Scopoli, 1786)	WM	LC
		31. Red Wattled Lapwing	<i>Venellus indicus</i> (Linnaeus, 1758)	R	LC
	11. Scolopacidae	32. Common Sandpiper	<i>Actitis hypoleucos</i> (Linnaeus, 1758)	WM	LC
		33. Wood Sandpiper	<i>Tringa glareola</i> (Linnaeus, 1758)	WM	LC
	12. Sternidae	34. Indian river tern	<i>Sterna aurantia</i> (J.E. Grey, 1831)	R	UV
8.	Coraciiformes				
	13. Alcedinidae	35. White Breasted Kingfisher	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)	R	LC
		36. Common Kingfisher	<i>Alcedo atthis</i> (Linnaeus, 1758)	R	LC
		37. Lesser Pied Kingfisher	<i>Ceryle rudis</i> (Linnaeus, 1758)	R	LC
	14. Meropidae	38. Little Green Bee eater	<i>Merops orientalis</i> (Latham, 1801)	R	LC
	15. Coraciidae	39. Indian Roller	<i>Coracias benghalensis</i> (Linnaeus, 1758)	R	LC
	16. Upupidae	40. Common hoopoe	<i>Upupa epops</i> (Linnaeus, 1758)	R	LC
9.	Columbiformes				
	17. Columbidae	41. Rock Pigeon	<i>Columba livia</i> (J. F. Gmelin, 1789)	R	LC
		42. Spotted Dove	<i>Streptopelis chinensis</i> (Scopoli, 1786)	R	LC
		43. Laughing Dove	<i>Streptopelia senegalensis</i> (Linnaeus, 1766)	R	LC
10.	Psittaciformes				
	18. Psittacidae	44. Rose Ringed Parakeet	<i>Psittacula krameri</i> (Scopoli, 1769)	R	LC
11.	Cuculiformes				
	19. Cuculidae	45. Greater Coucal	<i>Centropus sinensis</i> (Stephens, 1815)	R	LC
		46. Asian koel	<i>Eudynamis scolopaceus</i> (Linnaeus, 1758)	R	LC
		47. Pied Cuckoo	<i>Clamator jacobinus</i> (Boddaert, 1783)	R	LC
		48. Common Cuckoo	<i>Cuculus canorus</i> (Linnaeus,1758)	R	LC
		49. Grey-bellied Cuckoo	<i>Cacomantis passerinus</i>	R	LC
12.	Apodiformes				
	20. Apodidae	50. Common Swift	<i>Apus apus</i> (Linnaeus, 1758)	R	LC
		51. Little Swift	<i>Apus affinis</i> (J. E. Dim, 1830)	R	LC
		52. Asian palm quick	<i>Cypsiurus</i> (J.E. Gray, 1829) <i>balasinesis</i>	R	LC
13.	Strigiformes				
	21. Strigidae	53. Spotted Owlet	<i>Athene brama</i> (Temminck,1821)	R	LC
14.	Piciformes				

	22. Megalaimidae	54. Coppersmith Barbet	<i>Psilopogon haemacephalus</i> (Statius Müller, 1776)	R	LC
15.	Passeriformes				
	23. Dicruridae	55. Black Drongo	<i>Dicrurus macrocercus</i> (Vieillot, 1817)	R	LC
	24. Sturnidae	56. Brahminy Starling	<i>Sturnia pagodarum</i> (J F Gmelin, 1789)	R	LC
		57. Rosy starling	<i>Pastor roseus</i> (Linnaeus, 1758)	R	LC
		58. Common Myna	<i>Acridotheres tristis</i> (Linnaeus, 1766)	R	LC
	25. Corvidae	59. Jungle Crow	<i>Corvus macrorhynchos</i> (Wagler, 1827)	R	LC
		60. House Crow	<i>Corvus splendens</i> (Vieillot, 1817)	R	LC
	26. Pycnonotidae	61. Red-Vented Bulbul	<i>Pycnonotus cafer</i> (Linnaeus, 1766)	R	LC
	27 Timaliidae	62. Jungle Babbler	<i>Turdoides striatus</i> (Dumont de Sainte Croix, 1823)	R	LC
		63. Large Gray Babbler	<i>Turdoides malcolmi</i> (Sykes, 1832)	R	LC
	28. Sylviinae	64. Ashy Wren Prinia	<i>Prinia socialis</i> (Sykes, 1832)	R	LC
		65. Plain Prinia	<i>Prinia inornata</i> (Sykes, 1832)	R	LC
		66. Grey breasted Prinia	<i>Prinia hodgsonii</i> (Blyth, 1844)	R	LC
	29. Turdinae	67. Oriental Magpie Robin	<i>Copsychus saularis</i> (Linnaeus, 1758)	R	LC
		68. Indian Robin	<i>Saxicoloides fulicata</i> (Linnaeus, 1776)	R	LC
	30. Motacillidae	69. Yellow wagtail	<i>Motacilla flava</i> (Linnaeus, 1758)	WM	LC
		70. White Wagtail	<i>Motacilla alba</i> (Linnaeus, 1758) (J F, Gmelin, 1789)	WM	LC
		71. White browed wagtail	<i>Motacilla aderaspatensis</i> (J. F., Gmelin, 1789)	WM	LC
		72. Grey Wagtail	<i>Motacilla cinerea</i> (Tunstal, 1771)	WM	LC
		73. Yellow wagtail	<i>Motacilla flava</i> (Linnaeus, 1758)	WM	LC
	31. Nectariniidae	74. Crimson Sunbird	<i>Nectarina minima</i> (Sykes, 1832)	R	LC
		75. Purple Rumped sunbird	<i>Leptocoma zeylonica</i> (Linnaeus, 1766)	R	LC
	32. Passeridae	76. House Sparrow	<i>Passer domesticus</i> (Linnaeus, 1758)	R	LC
	33. Ploceidae	77. Baya weaver	<i>Ploceus philippinus</i> (Linnaeus, 1766)	R	LC
	34. Estrildidae	78. Chestnut Munia	<i>Lonchura atricapila</i> (Vieillot, 1807)	WM	LC
		79. Black Throated Munia	<i>Lonchura kelaarti</i> (Jerdon, 1863)	R	LC
		80. White throated Munia	<i>Lonchura malabarica</i> (Linnaeus, 1758)	R	LC
	35. Laniidae	81. Long-tailed shrike	<i>Lanius schach</i> (Linnaeus, 1758)	WM	LC
	36. Muscicapidae	82. Black redstart	<i>Phoenicurus ochruros rufiventris</i> (S. G. Gmelin, 1774)	WM	LC
		83. Tickell's Blue Flycatcher	<i>Cyornis tickelliae</i> (Blyth, 1843)	R	LC
	37. Aegithinidae	84. Common Lora	<i>Aegithina tiphia</i> (Linnaeus, 1758)	R	LC
	38. Rhipiduridae	85. Spot-breasted Fantail	<i>Rhipidura albogularis</i> (Lesson, 1831)	R	LC
	39. Cisticolidae	86. Common Tailorbird	<i>Orthotomus sutoris</i> (Pennant, 1769)	R	LC
	40. Hirundinidae	87. Red-rumped Swallow	<i>Cecropis daurica</i> (Laxmann, 1769)	WM	LC
	41. Campephagidae	88. Small minivet	<i>Pericrocotus cinnamomeus</i> (1776)	R	LC
	42. Zosteropidae	89. Indian white-eye	<i>Zosterops palpebrosus</i> (Temminck, 1824)	R	LC
	43. Alaudidae	90. Common Crested Lark	<i>Galerida cristata</i> (Linnaeus, 1758)	R	LC

Ecological Status: R = Resident, WM = Winter Migrant.

IUCN= International Union for Conservation of Nature, LC= Least Concern, VU = Vulnerable species NT= Near Threatened.

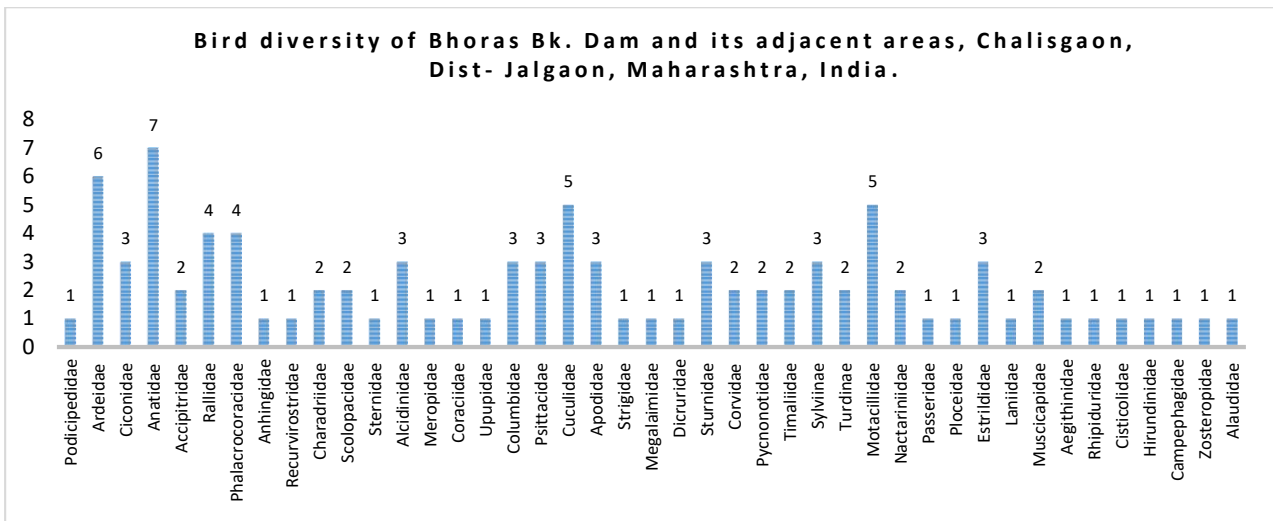


Fig: 2. Bird diversity of Bhoras Bk. Dam and its adjacent areas, Chalisgaon, Dist- Jalgaon.

Result and Discussion

In the present bird diversity reporting study all various habitats like the water bodies, and its adjacent area were observed for sighting the birds. In the present study total 90 species including water and land bird were recorded belonging to 15 avifaunal orders and 43 families.

Order Passeriformes was dominant in the study area, including 21 families and 36 species (40%), followed by Ciconiformes with 2 families and 09 species (10%), Ansariformes with 1family and 7 species (7%), Falconiformes with 1 family and 2 species, Pelecaniformes with 1 family and 4 species (4%), Charadriiformes with 4 families and 6 species (7%), Coraciiformes with 4 families and 6 species (7%), Gruiformes 1 family and 4 species (4%), Anhingidae 1 family and 1 species, Columbiformes with 1 family and 3 species, Psittaciformes with 1 family and 1 species, Cuculiformes with 1 family and 5 species, Apodiformes with 1 family and 3 species, Strigiformes with 1 family and 1 species, Piciformes with 1 family and 1 species Podicipediformes with 1 family and 1 species, and details of distribution are as shown in (Table-1 and Fig:2). This study represents that species diversity is abundant in spite of many anthropogenic activities. This study will be useful for conservation of bird diversity of this area.

The survey of Avifauna of Bahula Dam and its nearby areas of Pachora, Dist. Jalgaon, Maharashtra, India, during this survey study total 105 species including water and the land bird were recorded belonging to 16 avifaunal orders and 46 families. Order Passeriformes is dominant in the study area, including 23 families and 44 species (41%), followed by Coraciiformes with 4 families and 7 species (6%), Charadriiformes with 4 families and 6 species (5%), Ciconiformes with 3 families and 6 species and (5%), Ansariformes with 1 family and 9 species (8%) (Dr. A. D. Shelke, 2022).

The population of lesser whistling duck was found good, they were in groups sometimes they were found resting on the middle land area of the dam. sometimes they were found in the searching of the food in group. The population of the common coot was also good and they were found always active in search of food. The Little Egret, Cattle Egret, Median Egret were in groups and are most populated species of this dam. Only one Darter species (*Anhinga melanogaster*) which was observed searching food near dry weed in shallow water during afternoon. Two Black Necked Stork (*Ephippiorhynchus asiaticus*) and three painted stork (*Mycteria leucocephala*) are a species of stork which is under NT status was observed during searching food. Black Headed Ibis (*Threskiornis melanocephalus*) are observed which is also under near threatened (NT) category.

Three to four in number Indian River tern (*Sterna aurantia*) was observed which are under the vulnerable (UV) category of IUCN status. During entire observation period the tern species was flying close to stagnant water pool of dam. Little cormorants were found resting on the bank trees of the dam. Asian open bill was observed in shallow water. They were finding bivalve in the shallow water using their long bill and one foot at the same time.

Spot Billed Duck was found in pair in search of food. One pair of Red-naped Ibis was found on the bank of the dam in search of food. Population of passerine birds were found good.

Bhoras Bk. Dam have a shallow water in their peripheral area with paddy field because of that it provides good environment for growth of freshwater animals, and ultimately it provides good food for winter migratory birds and its adjacent areas provides good food for resident birds. Passerine birds showed a broad range of feeding habits both in agricultural fields and grassland areas; hence they were less prone to habitat destruction and anthropogenic activities. The present bird diversity has been reported by capturing the quality photographs of water and land birds. In the present study effort has been made to make bird diversity of Bhoras Bk. Dam and its adjacent areas. But still there is a need of more surveys and observation to produce detail data.

Conclusion

The present study of avifaunal diversity of Bhoras Bk. Dam and its adjacent areas, Tal.- Chalisgaon, Dist- Jalgaon, Maharashtra, India, provides the suitable and favourable habitat for the residential and migratory birds. But the bird habitats of this area are affected by anthropogenic activities, and pollution due to spraying of insecticides on the crops, if such activities will continue in future the bird population of this area may be decrease.

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References

1. Ali, S. 2002. The Book of Indian Birds, 13th revised Ed. Mumbai: Bombay Natural History Society, Mumbai.
2. Barbarossa, V., Schmitt, R.J.P., Huijbregts, M.A.J., Zarfl, C., King, H. and Schipper, A.M. 2020. The impact of current and future large dams on the geographic range connectivity of freshwater fish species worldwide. Proc. Natl. Academy. Science. USA. 117, 3648-3655. doi: 10.1073/pnas.1912776117.
3. Burkert, U., Ginzl, G., Babenzien, H.D., Koschel, R., 2004. "Hydrogeology of the river basin and the consequences of artificial lake division of the lake of Lake Fuchskuhle", Biogeochemistry, Vol. 71, tr. 225-246.
4. Chapman, B.B., Bronmark, C., Nilsson, J.A. and Hansson, L.A. 2011. The ecology and evolution of partial migration. Oikos, 120: 1764-1775.
5. Grimmett R, Inskipp C. and Inskipp T. 2011. Birds of Indian Subcontinent. Helm Field Guide. Oxford University Press, India.
6. Shelke, A. D. 2022. The survey of Avifauna of Bahula Dam and its nearby areas of Pachora, Dist. Jalgaon, Maharashtra, India' International Journal of Zoological Investigations, Vol. 8, No. 1, 167-176. ISSN:2454-3035.
7. Simeone, A., Araya, M.B., Bernal M., Diebold, E.N. Grzybowski, K. Michaels, M. Teare, J. A. Wallace R.S., and Willis, M.J. 2002. Oceanographic and climatic factors influencing breeding and colonization patterns of Humboldt penguins (*Spheniscus humboldti*) in central Chile. Advances in Marine Ecology Series 227:43-50.
8. Wu, H., Chen J., Xu, J., Zeng G., Sang L., Liu Q. *et al.* 2019. The impact of dam construction on biodiversity: a review. J. Clean. Product. 221, 480-489. doi: 10.1016/j.jclepro.2019.03.001.