

Conservation Status of Ichthyofauna of Baghel Taal, a Wetland of District Bahraich (U. P.), India

SADGURU PRAKASH¹, DHARMENDRA SINGH²

¹ Department of Zoology, M. L. K. (P.G.) College, Balrampur, U.P.

² Department of Zoology, Shiv Pati (P.G.), College, Shohratgarh, Siggharthnagar, U.P.

Abstract- An attempt was made to study the conservation status of the fishes naturally occurring in Semara taal, a naturally occurring wetland near Shohratgarh of Siddharthnagar district of Uttar Pradesh. The study was conducted during September, 2018 to August 2019. During exploration, a total of 35 species of fishes belonging to 23 genera, 17 families and 8 orders were identified. As per latest version of IUCN Red List, out of 35 species of fishes identified, 2 species comes under EN (endangered), 4 species come under NT (near threatened), 23 under LC (least concern) and 6 species are NE (not evaluated) so far.

Indexed Terms- Fish diversity, Conservation status, Baghel Taal.

I. INTRODUCTION

India is endowed with vast freshwater consisting 45,000 km of rivers, 26,334 km of canals, 2.36 million hectares of ponds and tanks, 2.05 million hectares of reservoirs and 5,82,86,000 hectares of wetlands (Bhakta and Bandyopadhyay, 2008 and Kumar *et al.*, 2015). These waterbodies have rich and diversified fish fauna characterized by many rare and endemic fish species. The fresh water of India are utilized for irrigation or urban-industrial water supply or of hydro power generation or for discharging of sewage and industrial waste or for the capture of edible fish. Due to irrational fishing practices, environmental aberrations like reduction in water volume, increased sedimentation, water abstraction, and pollution over the years this diversity is decline and even few species have been lost from the freshwater ecosystem of India and some are belonging under endemic, endangered and threatened category (Bhakta and Bandyopadhyay, 2008).

Fish constitutes almost half of the total number of vertebrates in the world. Out of 30,900 species of vertebrate, about 21723 living fish species have been recorded (Jayaram, 1999). They live in almost all conceivable aquatic habitats. Of these, 8411 are freshwater species and 11,650 are marine (Kar *et al.*, 2006).

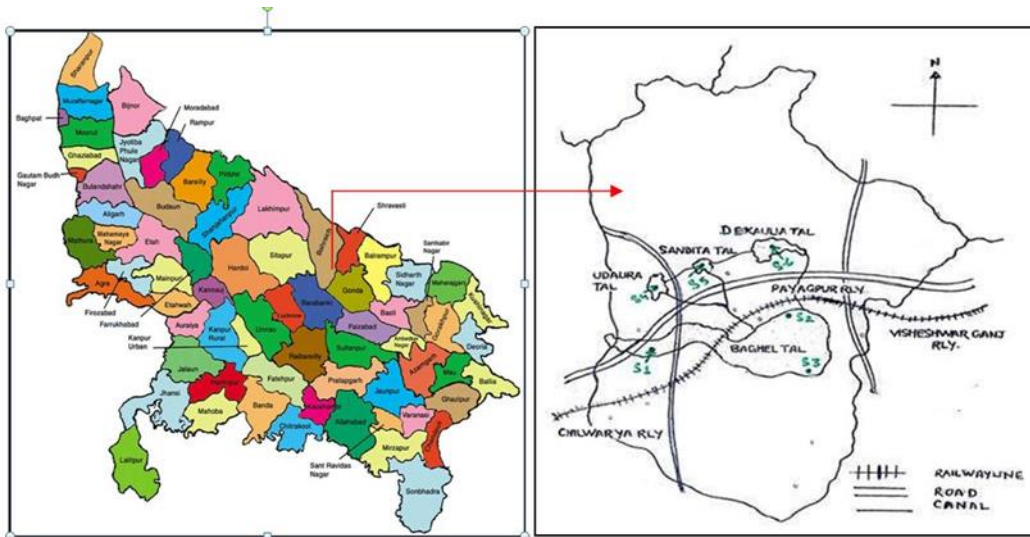
Wetlands are transitional lands between terrestrial and aquatic ecosystem, where the water tabel is usually at or near the surface or the land is covered by shallow water. These are very productive ecosystems, which help in the regulation of biological cycles, maintenance of water quality, nutrient movement and support for food chains (Ranjan and Prakash, 2019). Wetlands are important components of watersheds and provide many valuable functions to the environment and to society. The water resource is being used for various purposes such as domestic use, agriculture and fish culture etc. by local community. Now wetlands are shrinking rapidly because of urbanization and industrialization. Due to urbanization and anthropogenic pressure most of the wetlands are succumbed to greater degree of biologically active nutrient accumulation (Verma and Prakash, 2018; Prakash and Singh, 2019).

Natural waters have more stable conditions under which the fish evolve, hence enlisting biodiversity and its distribution over time and space becomes important. Until we know the diversity and variations over time and space, it is difficult to plan conservation and the development projects related to water resources. Knowledge of fish diversity of particular region is essential not only for rational management of ichthyofauna of that region but also for their conservation strategies. Additionally, for the exploitation and scientific development of fish culture, knowledge of existing fish fauna of the area is a prerequisite. Prakash *et al.* (2015a, 2015b), Verma *et*

al. (2016) Prakash and Singh (2019) and Prakash (2020) conducted the limnological studies as well as studies on fish biodiversity in a fresh water body. Although a large number of workers have studied ichthyofauna of lentic waterbodies of India but there are few reports on the fish diversity of wetlands in U.P. Therefore, the present study is an attempt to systematic survey on the fish diversity and conservation status of these naturally occurring fishes in Baghel Taal, A Wetland of Bahraich district of U.P.

II. STUDY AREA

Baghel Taal is a large shallow perennial lentic waterbody with irregular margin and dense growth of macrophytes. It is situated in village Baghel, Payagpur block of district Bahraich at a distance of about 1.60 km. To the south-east of Payagpur Railway station. It is about 31 km, away from Gonda, 30 km, from Baahraich and 45 km. From Balrampur.

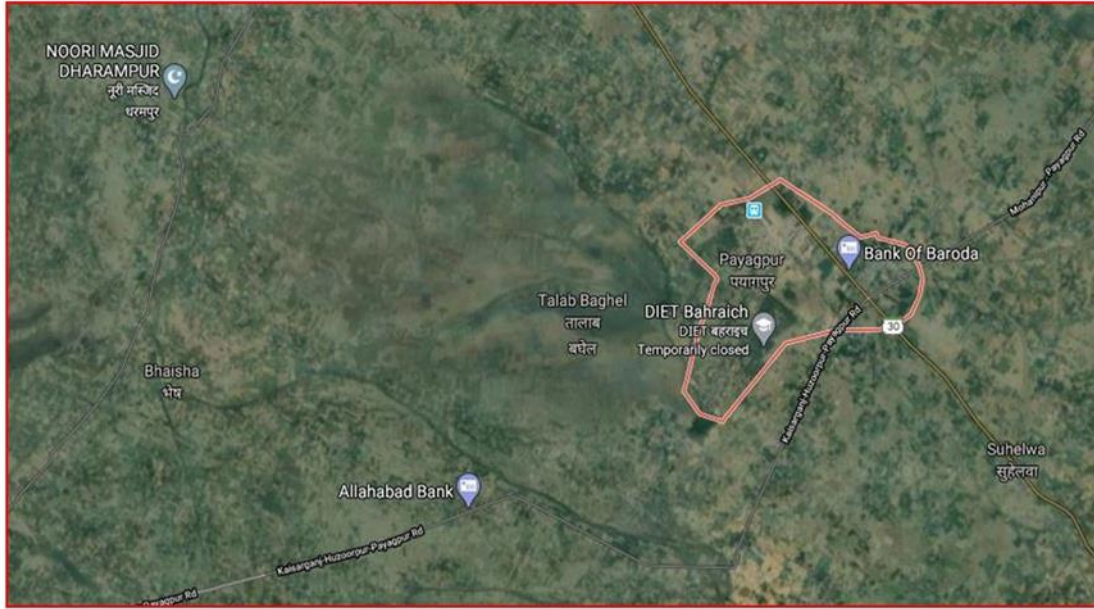


Map of U.P. Showing District Bahraich

Location of Baghel Taal in Payagpur Block of Bahraich District

It is half oval in shape with maximum diameter of 3800m and connected with three small waterbodies namely Udavra Tal, Sandita Tal and Dekaulia Tal. It receives water from three main streams, Babia nallah from north-west side, Jamvar nallah from north and Sakarpatti nallah from north-east side during rainy season. It is also a Bird sanctuary extending around 32 km with total catchment area of wetland 441.5575 acre. Out of this only 121.22 acre is water body in

rainy season but in summer its area becomes reduced with maximum depth 3.6m. It is habitat of rich micro- and macro living organisms including Nymphaea, Nelumbo, Narkul, Tinna rice, vegetation as well as various annelids, molluscans, fishes and amphibians. The abundant food attracts hundreds of resident and migratory birds including Siberian crane during winter season.



Satellite view of Baghel Taal, Wetland in Bahraich District U.P.



Image of Baghel Taal

III. MATERIALS AND METHODS

For the present study fishes were collected fortnightly from 6 sites (S1-S6) of taal during September, 2018 to August, 2019. Sites S1, S2 and S3 are located in inshore region of Baghel taal whereas sites S4, S5 and S6 are located in Udavra taal, Sandita taal and Dekaulia taal. The fishes were caught by hand-nets,

gill nets, cast nets, hooks, drag nets with the help of local people and fisherman mainly during the time of fishing.

Fishes were identified by using the standard keys of Mishra (1959), Day (1989), Jayaram (1999) and Srivastava (1998). Interaction with local people also assisted the authors in various ways for data collection and identification.

IV. RESULTS AND DISCUSSION

The present study indicated that the freshwater body is rich in fish fauna. A total of 35 species belonging to 8 orders, 17 families and 23 genera, were recorded during entire study period. Their vernacular names with family, order and conservation status are given in the table.

Table: Fish fauna of Baghel Taal during September, 2018- August, 2019.

S.No.	Name	Family	Order	Conservation status
	<i>Catla catla</i>	Cyprinidae	Cypriniformes	NE
	<i>Labeo rohita</i>	Cyprinidae	Cypriniformes	LC
	<i>Labeo calbasu</i>	Cyprinidae	Cypriniformes	LC

	<i>Cirrhinus mrigala</i>	Cyprinidae	Cypriniiformes	LC
	<i>Cirrhinus reba</i>	Cyprinidae	Cypriniiformes	LC
	<i>Cyprinus carpio</i>	Cyprinidae	Cypriniiformes	NT
	<i>Puntius ticto</i>	Cyprinidae	Cypriniiformes	LC
	<i>Amblypharyngodon mola</i>	Cyprinidae	Cypriniiformes	LC
	<i>Mystus seenghala</i>	Bagridae	Siluriformes	NE
	<i>Mystus cavasious</i>	Bagridae	Siluriformes	LC
	<i>Mystus vittatus</i>	Bagridae	Siluriformes	LC
	<i>Mystus tengara</i>	Bagridae	Siluriformes	LC
	<i>Mystus aor</i>	Bagridae	Siluriformes	LC
	<i>Wallago attu</i>	Siluridae	Siluriformes	NT
	<i>Ompok pabda</i>	Siluridae	Siluriformes	NE
	<i>Ompok bimaculatus</i>	Siluridae	Siluriformes	EN
	<i>Clarias batrachus</i>	Clariidae	Siluriformes	LC
	<i>Heteropneustes fossilis</i>	Saccobranchidae	Siluriformes	LC
	<i>Pangasius pangasius</i>	Schilbeidae	Siluriformes	NT
	<i>Ailia coila</i>	Schilbeidae	Siluriformes	NT
	<i>Channa punctatus</i>	Ophiocephalidae	Ophiocephaliformes	NE
	<i>Channa marulius</i>	Ophiocephalidae	Ophiocephaliformes	LC
	<i>Channa gachua</i>	Ophiocephalidae	Ophiocephaliformes	LC
	<i>Glossogobius giuris</i>	Gobiidae	Perciformes	LC
	<i>Anabas testudeni</i>	Anabantidae	Perciformes	NE
	<i>Nandus nandus</i>	Nandidae	Perciformes	LC
	<i>Colisa fasciatus</i>	Osphronemidae	Perciformes	NE
	<i>Chanda nama</i>	Ambassidae	Perciformes	LC
	<i>Notopterus notopterus</i>	Notopteridae	Osteoglossi- formes	LC
	<i>Notopterus chitala</i>	Notopteridae	Osteoglossi- formes	LC
	<i>Gudusia chapra</i>	Clupeidae	Clupeiformes	LC
	<i>Setipinna phasa</i>	Engraulidae	Clupeiformes	LC
	<i>Xenentodon cancila</i>	Belonidae	Beloniformes	LC
	<i>Mastacembelus armatus</i>	Mastacembeleidae	Synbranchi- formes	LC
	<i>Mastacembelus aculeatus</i>	Mastacembeleidae	Synbranchi- formes	EN

Fish species composition when grouped into families reveal that Cyprinidae captures the major share (22.85%) followed by family Bagridae (14.28%), Siluridae (8.57%), Ophiocephalidae (8.57%), Schilbeidae (5.71%), Notopteridae (5.71%), Mastacembeleidae (5.71%) and each of remaining 10 families comprises 2.85%. Besides native fishes, exotic fish, *Cyprinus carpio* was also present in this taal. *Catla catla*, *Labeo rohita*, *Cyprinus carpio*, *Ompok pabda* are rare and have been recorded during rainy season. *Puntius ticto* has been recorded during spring season. There may be a possibility that these

fishes might have entered in taal from fish pond of this area during rainfall. On the basis of rate of decline, population size, area of geographic distribution and degree of population, distribution fragmentation etc., IUCN (International Union for Conservation of Nature) Red List (2016) classified the species into nine groups including EN (Endangered), VU (Vulnerable), NT (near threatened), LC (least concern) and NE (not evaluated).

During survey, a total of 35 species of fishes belonging to 23 genera, 17 families and 8 orders were identified.

As per latest version of IUCN Red List, out of 35 species of fishes identified, 2 species comes under EN, 4 under NT (near threatened), 23 under LC (least concern) and 6 species are NE (not evaluated) so far. Considerable attention should be paid to conserve fish species comes under EN and NT categories. The fishery department must stock fingerlings of Indian major carp and exotic carp. Fishing during breeding season is serious threat and should be banned. Illegal fishing methods and fishing of small sized fishes should be monitored regularly. Licensed must be issued based upon the stock available in the waterbody.

CONCLUSION

Fishes are very important components of the wetlands and they play an important role in food web. The occurrence of fishes attracts many piscivorous migratory birds to this wetland. The gradual degradation of wetland due to numerous factors can cause lot of this fish diversity. Therefore, ecological point of view a detailed study of biodiversity of this wetland is required so that effective conservation and management action plan can be designed and implemented for sustainable development of this wetland.

REFERENCES

- [1] Day F. (1989). The fauna of British India including Ceylon and Burma. Fishes Taylor and Francis, London.
- [2] Jayaram, K.C. (1999). The freshwater fishes of the Indian Region. Narmada Publishing House, Delhi, India.
- [3] Bhakta, J. N. and Bandyopadhyay, P.K. (2008). Fish diversity in freshwater perennial water bodies in east Midnapore district of West Bengal, India. *Int. J. Environ. Res.*, 2(3): 255-260.
- [4] Kar, D., Nagarathna, A.V., Ramachandra, T.V. and Dey, S.C. (2006). Fish diversity and conservation aspects in an aquatic ecosystem in Northeastern India. *Zoos Print Journal*. 21(7):2308-2315.
- [5] Kumar, U., Choudhary, S., Kumar, M. and Paswan, R (2015): Physico-chemical Parameters of Gamhi water body of the Kaula Chaur (Wetland

Of Begusarai District (Bihar). *Proc.Zool.Soc.India*. 14 (1):1-6.

- [6] Mishra K.S. (1959). An aid to identification of the common commercial fishes of India and Pakistan. Record Indian Museum.
- [7] Prakash, S. (2000). Fish diversity of Semara Taal, a wetland of district Siddharthnagar (U.P.), India. *International Journal of Fisheries and Aquatic Research*. 5(2):7-9.
- [8] Prakash, S. and Singh, D. (2019). Liminology of Baghel Taal, a wetland of district Bahraich (U.P.). *Iconic Research and Engineering Journal*. 3 (3):151-158.
- [9] Prakash S., Verma A.K., and Prakash S. (2015a). Limnological Studies of Alwara Lake of Kaushambi (U.P.). *International Journal on Biological Sciences*. 6 (2): 141-144..
- [10] Prakash S., Verma A.K., Prakash S. (2015b). Seasonal variation of Zooplankton and Zoobenthos Population in Alwara lake of District Kaushambi (UP) India. *The Journal of Zoology Studies*. 2(5):13-16.
- [11] Ranjan, R. and Prakash, S. (2019). Seasonal Variation in Primary Productivity and Macrophytes of Baghel Taal. *Iconic Research and Engineering Journal*. 3 (6):210-215..
- [12] Srivastava Gopalji. 1998. Fishes of U.P. and Bihar, Vishwavidyalaya Prakashan Chowk, Varanasi, India.
- [13] Verma, A.K. and Prakash, S. (2018). Qualitative and quantitative analysis of macrozoobenthos of Beghel Taal, a wetland of U.P. *Indian Journal of Biology*. 5 (2): 127-130
- [14] Verma A.K., Kumar S. and Prakash S. (2016b). Seasonal Correlation between physico-chemical factors and phytoplankton density in Alwara taal of Kaushambi, U. P., India. *International Research Journal of Biological Sciences*. 5(3):40-45.

ACKNOWLEDGEMENT

Authors are highly grateful to the Principal M.L.K. P.G. College, Balrampur for providing necessary laboratory facilities.