

# Biodiversity of Bhagel Taal of Bahraich: A Preliminary Survey

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**Abstract-** *The present study is undertaken to assess the biodiversity of naturally occurring Bhagel Taal of Bahraich district of Uttar Pradesh. The said wetland is one of the natural fresh water reservoirs of this district and is rich in biodiversity. The data obtained during the detail survey of the study area and taal during 2016-2017 indicated that this wetland is rich in biodiversity. It has been found that management of wetland has received inadequate attention as a result, it is subject to anthropogenic pressures, including land use changes in the catchment; pollution from households, encroachments and over exploitation of its natural resources.*

**Indexed Terms-** *Bhagel Taal, Biodiversity, Wetland.*

## I. INTRODUCTION

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually aquatic at or near the surface, or the land is covered by shallow waters (Cowardin *et al.*, 1979). Wetlands are amongst the most productive ecosystems on the Earth and provide many important services to human society (Ten Brink *et al.*, 2012). They are also ecologically sensitive and adaptive systems and perform some useful functions in maintaining ecological balance of the nature (WWF, 1987). They also occur extensively throughout the world in all climatic regions and are estimated to cover about 6% of the earth's surface. They also occur in all shapes and sizes ranging from less than one hectare to hundreds of square kilometres in area (Sugunan, 1997). Wetlands occur where the water table is at or near the surface of the land, or where the land is covered by water. Wetlands are cradles of biological diversity, providing the water and primary productivity upon which countless species of plants and animals depend for survival. They have

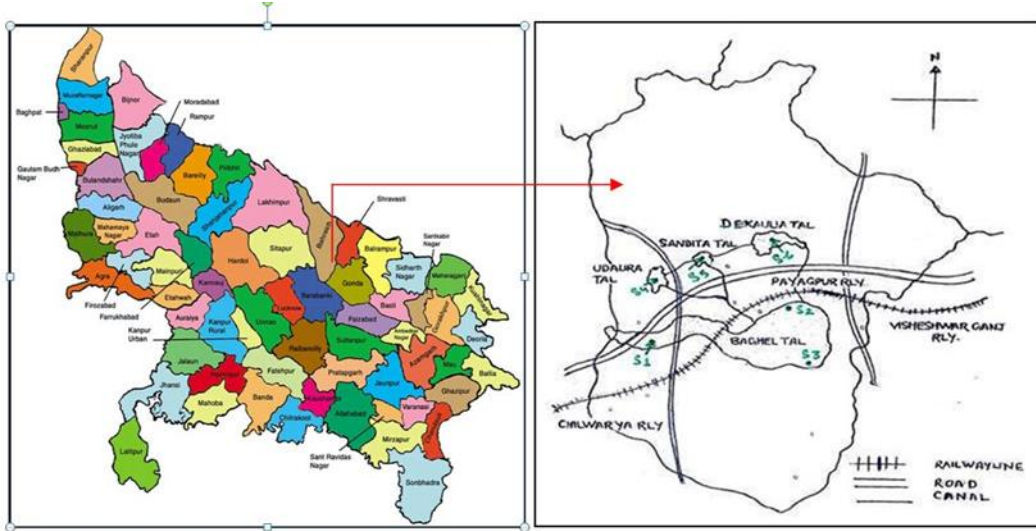
been an essential part of human civilization meeting many crucial needs for life such as drinking water, food, fodder, energy supply, flood storage, transport, recreation, biodiversity, and climate stabilization.

The loss of wetlands has led to several ecological disasters in some areas, including large-scale devastation due to inundation. The major causes of loss of biodiversity in wetland systems include land use patterns, habitat destruction, pollution, exploitation of resources, and invasive species. Wetlands are under increasing stress due to the rapidly growing population, technological development, urbanization and economic growth.

Wetland loss may be defined as the loss of wetland area, due to conversion of wetland to non-wetland areas as a result of human activity and wetland degradation is the impairment of wetland functions as a result of human activity. About 50 % of the world's wetlands have been lost in the last century, primarily through drainage for agriculture, urban development and water system regulations. On a global scale, the loss of wetlands can be mainly attributed to natural and anthropogenic activities such as climate change through increased atmospheric temperature, shifting patterns in precipitation, increased frequency of storms, droughts, and floods, and sea level rise etc.

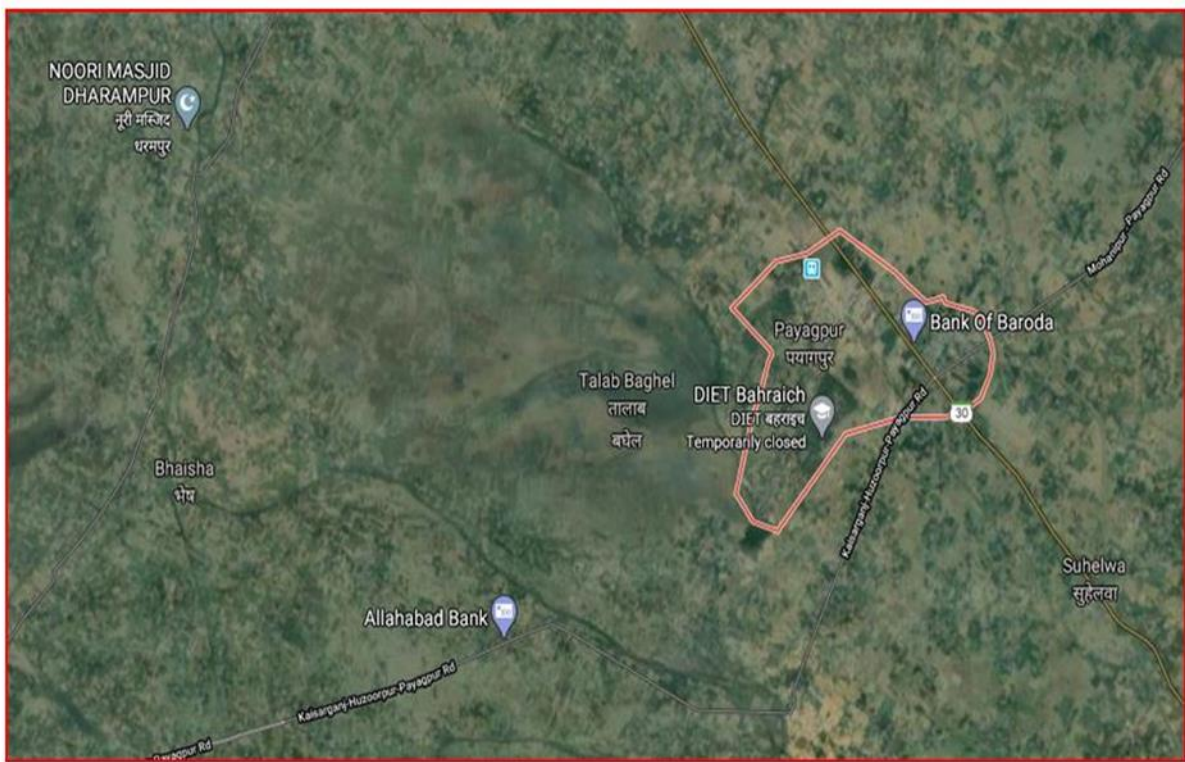
## II. STUDY AREA

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 Bahraich and 45 km from Balrampur.



Map of U.P. Showing District Bahraich

Location of Baghel Tal in Payagpur Block of Bahraich District



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

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, amphibians and Birds. The abundant food attracts hundreds of resident and migratory birds including Siberian crane during winter season

### III. MATERIALS AND METHODS

Several seasonal periodical surveys of the pond and its tributaries were carried out during the year 2017-2018. Standard survey methods for field work (Moll and Vijaya, 1986; Rao and Singh, 1987; Burbridge, 1994; Statzner *et al*, 1994) were followed. Fishes were identified using the standard keys of Jhingran (1991) and Srivastava (1998). Dutta (2007) and Dinesh *et al*, (2017) helped to identify amphibians while reptiles with the help of Aengals (2012). Birds were identified with the help of Ali (1988). People of local communities of adjoining areas also assisted the authors in many ways for collection, identification and hospitality.

### IV. RESULTS AND DISCUSSION

- Faunal Diversity: The taal studied has rich in faunal diversity. Besides several microscopic zooplankton (belonging to Protozoa, Rotifera and Crustacea) annelids, arthropods, molluscans, fishes, reptiles, birds and mammals have also been observed in and around the taal as follows:
  - Annelids: Notable annelids represented by *Tubifex*, *Pheretima*, *Branchiura* and Leech.
  - Arthropods: Arthropods are represented by *Chironomus* larvae, crabs, butterflies, moths, grasshoppers, ants, termites and small sized freshwater shrimp.
  - Molluscans: Molluscans are represented by *Thiara*, *Unio*, *Pila*, *Lymnaea*, *Bellamya* and *Gibbia*.
  - Fishes: The said wetland has rich fish diversity including 25 species of fishes represented by *Catla catla*, *Labeo rohita*, *Labeo calbasu*, *Cirrhinus*

*mrigala*, *Puntius ticto*, *Mystus seenghala*, *Mystus cavasious*, *Mystus vittatus*, *Mystus aor*, *Wallago attu*, *Ompak pabda*, *Clarias batrachus*, *Heteropneustes fossilis*, *Pangasius pangasius*, *Ailia coila*, *Channa punctatus*, *Channa marulius*, *Glossogobius giuris*, *Anabas testudeniis*, *Colisa fasciatus*, *Notopterus notopterus*, *Notopterus chitala*, *Gudusia chapra*, *Xenentodon cancila*, and *Mastacembelus armatus*.

- Amphibians: Notable amphibians reported from the said taal are Indian bull frog, Common Indian toad (*Bufo melanostictus*), Indian bull frog (*Rana trigina*) and Tree frog (*Polypedates sp.*).
- Reptiles: Reptiles are represented by Indian narrow-headed soft-shell turtle, Tortoise, Garden lizard,
- Birds: The Baghel Taal has rich avian diversity represented by 15 type of birds namely Peacock, Koel, Common myna, Sparrow, Parrot, Pigeon, Sarus crane, Bulbul, Woodpecker, Hornbill, Spoonbill, Owl, Crow, Egret, Vulture and Siberian crane.
- Mammals: Mammals are represented there such as Otter, Mole, Mongoose, Fox, Jackal, Rabbit, Shrew, Rat, Mouse, Squirrel, Nilgai and Pig.
- Floristic Diversity: The taal studied has rich in floristic diversity. Besides microscopic phytoplankton (belonging to Chlorophyceae, Bacillariophyceae, Cyanophyceae and Euglenophyceae) several angiospermic hydrophytes have also been observed in and around the taal as follows:
  - Free floating: *Eichhornia*, *Pistia*, *Spirodela*, *Wolffia*, *Lemna* and *Hygrorhiza*.
  - Rooted floating: *Ipomoea aquatic*, *Nymphaea* and *Nelumbo*.
  - Rooted Submerged: *Hydrilla*, *Vallisneria*, *Nagas* and *Potamogeton*.
  - Suspended hydrophytes: *Ceratophyllum* and *Utricularia*.
  - Rooted Amphibians: *Alternanthera*, *Apluda*, *Boerhaavia*, *Canscora*, *Centella*, *Cyparus*, *Evolvulus*, *Glinuslotoides*, *Heliotropium*, *Hygrophyla*, *Limnophila indica*, *Lindernia ciliate*, *Monocharia vaginalis*, *Polygonum spp.*, *Sagittaria trifolia*, *Sonchus*, *Tephrosia*, *Trianthema*, *Typha*, *Veronica*, *Veteveria* etc.

Besides, the flowering plants few pteridophytes namely Marsilea, Equisetum, Salvinia and Azolla etc.; bryophytes such as Riccia and other mosses etc. have been recorded.

Considering the importance, causes, and consequences of loss of this highly productive ecosystem with rich biodiversity, it seems better to protect and conserve the Bhagel Taal. The conservation is necessary because loss of a regional wetland not only accounts for the loss of biodiversity but also disturbs the biotic constitution and geo-climatic balance of the region. All these finally may lead to non-sustainability and natural disasters. Looking on the biodiversity of the taal, it is urgently needed to preserve this wetland so as to offer a natural abode to the animals, a beautiful habitat to the plants and ecological gift to the environment.

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