Abstract
The present study was undertaken to record the diversity of Balapur pond of the Prayagraj district of Uttar Pradesh with special reference to vertebrates and angiosperms. The Balapur pond was surveyed in detail once in a month for a period of one year from January 2018 to December 2018. The survey reflects a rich and flourishing biodiversity of the pond studied including 40 chordate species and 38 species of angiosperms. The notable chordate diversity includes 12 species of fishes, 2 species of amphibians, 7 species of reptiles, 11 species of birds and 8 species of mammals. Besides, several species of annelids, crabs, butterflies, moths, grasshoppers, ants, termites, lobsters, snails, other gastropods, planktons, algae, bryophytes and pteridophytes have also been observed.

Introduction
A vertebrate has notochord during its embryonic development which is replaced by a cartilaginous or bony vertebral column or backbone in adults. The subphylum Vertebrata comprises seven classes of living animals namely Cyclostomata, Chondrichthyes, Osteichthyes, Amphibia, Reptilia, Aves and Mammalia. First four are popularly known as Anamniota and last three as Amniota (Verma and Prakash, 2020a). The angiosperms are well developed and highly evolved group of plants in which there is seeds enclosed within the fruit. They have well differentiated root, stem and leaves and also have well developed vascular tissue.

India is a developing and agriculture dominating country. Most of its population depends upon agriculture. In India, a large number of ponds, lakes and reservoirs occur naturally but most of them are not being utilized properly due to their improper and insufficient hydrobiological studies. A proper and systematic hydrobiological study is very important...
to understand the metabolic activities in the aquatic ecosystem especially pond. The pond contains standing water that provides habitat for wetland biota i.e. plants and animals.

Wetlands constitute one of the most productive ecosystems and play a significant role in the regional ecological sustainability. 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 cross cultural, economic and ecological values of wetlands provide a fine blend of past, present and future of human descend, existence, and future perspectives of sustainability.

Prakash *et al.*, (2015), Prakash and Verma (2015, 2016), Verma and Prakash (2016) performed the limnological and ichthyological studies of Alwara Lake of Kaushambi (U.P.). Verma (2016, 2017, 2019a, 2019b, 2020a), Verma and Prakash (2017, 2020b), Sugumaran *et al.*, (2020) and Bhagde *et al.*, (2020) studied the limnological parameters as well as distribution and conservation status of fishes in the various lentic fresh water bodies of Uttar Pradesh. The present exploration was undertaken to assess the biodiversity of Balapur pond of the Prayagraj district of Uttar Pradesh with special reference to vertebrates and angiosperms. This study was conducted during a period of one year from January 2018 to December 2018. The pond studied has rich and flourished biodiversity.

**Materials and Methods**

The pond studied is natural and perennial, located on south side of the village Balapur. It is located in Koraon block and tahsil of Prayagraj district of Uttar Pradesh (image 1). The pond studied is situated at a distance of approximately 62 kilometers from Prayagraj district HQ. Balapur is a small village of about 800 population size, surrounded by Janakpur in east, Paitiha in south west, Banshipur in north east and Murlipur in south. Generally summer begins in the month of March and continues till mid July. In and around this Balapur village, monsoon begins mostly in last July and more or less continues till mid September. Winter season normally starts in mid November and continues till mid February. Minimum temperature was recorded as 14.2 in January and maximum in July as 35.5°C. This pond (photo 1) is extended in more than two hectares, not only used for irrigation, fish culture but also used as a source of drinking water for animals.

Balapur pond was surveyed and studied in detail to record the vertebrates and angiosperms diversity once for a month along the period of one year from January 2018 to December 2018. The fishes and amphibians were caught and collected for the present survey by hand-nets, gill nets, cast nets, hooks, drag nets with the help of local people and animal catchers. The survey was conducted during
daytime from 7 am to 7 pm and all caught animals were released in to the pond after identification. Author did not need to collect the reptiles, birds and mammals as they were easily recognisable even from a long distance. People of local communities of adjoining areas also helped the author in several ways including hospitality; collection and identification of vertebrates and angiosperms.


Dutta (1997) and Dinesh et al., (2019) helped to identify amphibians while reptiles with the help of Aengals et al., (2012). Birds were identified with the help of Ali (1988) while angiosperms were identified with the help of Sambamurty (2010).

Results and Discussion
The author recorded (a) 40 species of vertebrates: 12 species of fishes (Verma 2019b), 2 species of amphibians, 7 species of reptiles, 11 species of birds, 8 species of mammals and (b) 38 species of angiosperms from Balapur pond (table 1).

Table1: List of Vertebrates and Angiosperms Recorded from Balapur Pond in the year 2018.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Biological name</th>
<th>Common name</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Catla catla</td>
<td>Bhakur</td>
<td>Cyprinidae</td>
</tr>
<tr>
<td>2.</td>
<td>Labeo rohita</td>
<td>Rohita</td>
<td>Cyprinidae</td>
</tr>
<tr>
<td>3.</td>
<td>Labeo calbasu</td>
<td>Karaunchh</td>
<td>Cyprinidae</td>
</tr>
<tr>
<td>4.</td>
<td>Cyprinus carpio</td>
<td>Common carp</td>
<td>Cyprinidae</td>
</tr>
<tr>
<td>5.</td>
<td>Cirrhinus mrigala</td>
<td>Naini</td>
<td>Cyprinidae</td>
</tr>
<tr>
<td>6.</td>
<td>Mystus seenghala</td>
<td>Tengara</td>
<td>Bagridae</td>
</tr>
<tr>
<td>7.</td>
<td>Rita rita</td>
<td>Rita</td>
<td>Bagridae</td>
</tr>
<tr>
<td>8.</td>
<td>Wallago attu</td>
<td>Pardni</td>
<td>Siluridae</td>
</tr>
<tr>
<td>9.</td>
<td>Clarias batrachus</td>
<td>Mangur</td>
<td>Claridae</td>
</tr>
<tr>
<td>10.</td>
<td>Heteropneustes fossilis</td>
<td>Singhii</td>
<td>Saccobranchidae</td>
</tr>
</tbody>
</table>
11. **Channa punctatus** | Saura | Ophiocephalidae
12. **Gudusia chapra** | Suhia | Clupeidae

**AMPHIBIANS**

13. **Hoplobatrachus tigerinus** | Indian bullfrog | Dicroglossidae
14. **Duttaphrynus melanostictus** | Common Indian toad | Bufonidae

**REPTILES**

15. **Calotes versicolor** | Garden lizard | Agamidae
16. **Uromastix hardwickii** | Spiny tailed lizard | Agamidae
17. **Hemidactylus flaviviridis** | House gecko | Gekkonidae
18. **Naja naja** | Indian Cobra | Elapidae
19. **Bungarus caeruleus** | Krait | Elapidae
20. **Eryx johnii** | Red Sand Boa | Boidae
21. **Varanus bengalensis** | Indian Monitor lizard | Varanidae

**BIRDS**

22. **Pavo cristatus** | Peacock | Phasianidae
23. **Eudynamis scolopaceus** | Koel | Cuculidae
24. **Acridotheres tristis** | Common myna | Sturnidae
25. **Passer domesticus** | House Sparrow | Passeridae
26. **Corvus splendens** | House Crow | Corvidae
27. **Pyconotus cafer** | Red-vented Bulbul | Pycnonotidae
28. **Psittacula eupatria** | Parrot | Psittaculidae
29. **Columbia livia** | Common Rock Pigeon | Columbidae
30. **Bubo bubo** | Owl | Strigidae
31. **Gyps indicus** | Indian Vulture | Accipitridae
32. ** Egretta garzetta** | Indian Egret | Ardeidae

**MAMMALS**

33. **Oryctolagus cuniculus** | Rabbit | Leporidae
34. **Sorex araneus** | Shrew | Soricidae
35. **Rattus rattus** | Rat | Muridae
36. **Mus musculus** | House mouse | Muridae
37. **Funambulus palmarum** | Squirrel | Sciuridae
38. **Sus scrofa** | Pig | Suidae
39. **Boselaphus tragocamelus** | Nilgai | Bovidae
40. **Lutrogale perspicillata** | Smooth-coated Otter | Mustelidae

**ANGIOSPERMS**

41. **Eichhornia crassipes** | Common water hyacinth | Pontederiaceae
42. **Monochoria vaginalis** | Pickerel weed | Pontederiaceae
43. **Hygroryza aristata** | Asian water grass | Poaceae
44. **Vetiveria zizanioides** | Vetiver | Poaceae
45. **Apluda mutica** | Mauritian grass | Poaceae
46. **Pistia stratiotes** | Water cabbage | Araceae
47. **Spirodela polyrhiza** | Common duckweed | Araceae
48. ** Wolffia arrhiza** | Rootless duckweed | Araceae
49. **Lemna perpusilla** | Minute duckweed | Araceae
50. **Ludwigia adscendens** | Water primrose | Onagraceae
51. **Nelumbo nucifera** | Indian lotus | Nelumbonaceae
52. **Nymphaea stellata** | Water lily | Nymphaeaceae
53. **Hydrilla verticillata** | Water thyme | Hydrocharitaceae
54. **Najas graminea** | Ricefield water-nymph | Najadaceae
55. **Potamogeton crassipes** | Clasping leaf pondweed | Potamogetonaceae
All the 12 species of fishes recorded are edible. People of the Balapur and adjoining areas hunt some birds and rabbit for flesh. Indian cobra and krait are poisonous reptiles. Most of the species of birds and few species of mammals are hunted for food. On the basis of rate of decline, population size, area of geographic distribution and degree of population, distribution fragmentation etc., most of the above species has already been evaluated by IUCN (International Union for Conservation of Nature) Red List. Most of the species recorded during exploration belong to least concern (LC) to critically endangered (CR) categories (Verma 2020b, 2020c). Out of the 38 species of angiosperms recorded; 22 species are rooted amphibians, 7 free floating, 4 rooted floated, 4 rooted submerged and 1 suspended hydrophytes. Besides, pteridophytes, bryophytes, algae, several species of annelids, crabs, butterflies, moths, grasshoppers, ants, termites, lobsters, snails, other gastropods and a number of diatoms and planktons have also been observed in and around the pond.

**Conclusion**

The author thus, recorded a total of 40 species of chordates including 12 species of fishes, 2 species of amphibians, 7 species of reptiles, 11 species of birds, 8 species of mammals and 38 species of angiosperms in and around the Balapur pond. Moreover, a number of species of annelids, crabs, butterflies, moths, grasshoppers, ants, termites, lobsters, snails, other gastropods and pteridophytes, bryophytes, algae, planktons, diatoms have also been observed. Considering the importance of rich biodiversity and highly productive ecosystem, the author suggests and strongly recommends for a complete study of the said pond both for diversity of plants and animals on large scale 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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Conflict of Interest
The authors do not have any conflict of interest.

References

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